CDP-XA1ES

SERVICE MANUAL

US Model

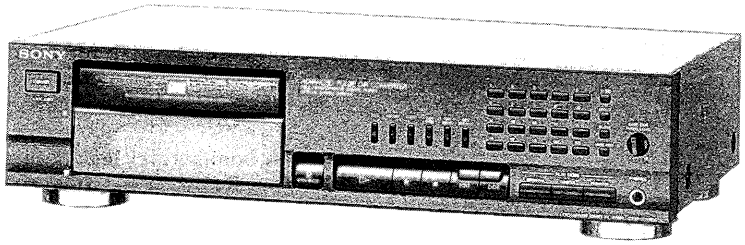


Photo : Black type

Model Name Using Similar Mechanism	CDP-515
CD Mechanism Type	CDM25C-5BD10B
Base Unit Type	BU-5BD10B
Optical Pick-up Type	KSS-240A

SPECIFICATIONS

Compact disc player

Laser	Semiconductor laser
Wavelength	780 – 790 nm
Frequency response	2 Hz to 20 kHz ± 0.5 dB
Signal-to-noise ratio	More than 108 dB
Dynamic range	More than 99 dB
Harmonic distortion	Less than 0.0027%
Channel separation	More than 103 dB

Outputs

	Jack type	Maximum output level	Load impedance
LINE OUT (FIXED)	Phono jacks	2 V (at 50 kilohms)	Over 10 kilohms
LINE OUT (VARIABLE)	Phono jacks	2 V (at 50 kilohms)	Over 50 kilohms
DIGITAL OUT (OPTICAL)	Optical output connector	–18 dBm	Wave length: 660 nm
PHONES	Stereo phone jack	10 mW	32 ohms

General

Power requirements	120 V AC, 60 Hz
Power consumption	13 W
Dimensions (approx.) (w/h/d)	430 × 110 × 295 mm (17 × 4 3/8 × 11 5/8 in.) incl. projecting parts
Mass (approx.)	3.8 kg (8 lbs 4 oz)

Supplied accessories

Audio cord (2 phono plugs – 2 phono plugs) (1)
Remote commander (remote) (1)
Sony SUM-3 (NS) batteries (2)

Design and specifications are subject to change without notice.

使用時は添付資料も参照のこと
Refer to the additional documents.

COMPACT DISC PLAYER

SONY®

TABLE OF CONTENTS

Section	Title	Page
SECTION 1. SERVICING NOTE		3
SECTION 2. GENERAL		4
SECTION 3. DISASSEMBLY		
3-1.	Removal of Loading Panel	5
3-2.	Removal of MD (BU-5BD10B) Block	5
SECTION 4. ELECTRICAL BLOCK CHEKING		6
SECTION 5. DIAGRAMS		
5-1.	Circuit Boards Location	7
5-2.	Block Diagram	8
5-3.	Printed Wiring Board	11
5-4.	Schematic Diagram	15
5-5.	IC Pin Function	
	• IC801 (CXP82316-052Q)	19
5-6.	IC Block Diagrams	20
SECTION 6. EXPLODED VIEWS		
6-1.	Case and Front Panel Section	22
6-2.	Chassis Section	23
6-3.	Mechanism Deck Section (CDM25C-5BD10B)	24
6-4.	Base Unit Section (BU-5BD10B)	25
SECTION 7. ELECTRICAL PARTS LIST		26

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.

2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

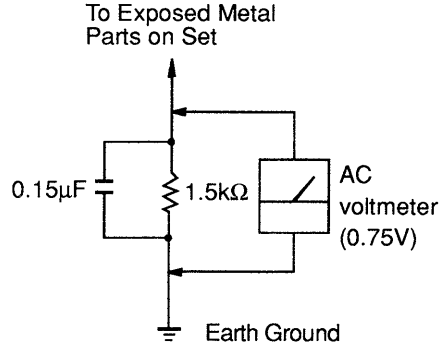


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
SERVICING NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

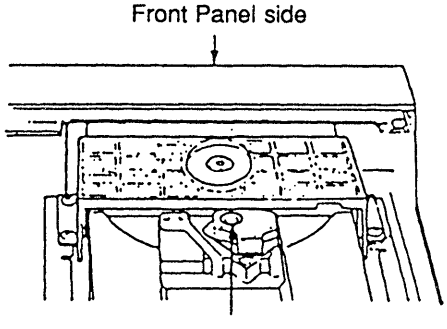
The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repain parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.

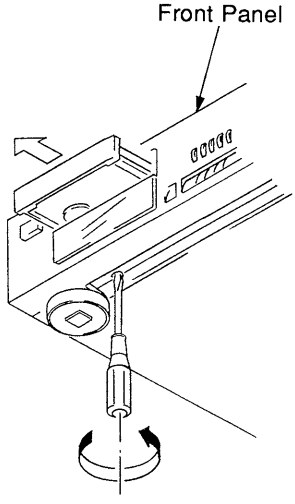


❶ Confirm that laser beam is spread.
❷ Up and down motion of the objective lens. (3 times)

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF

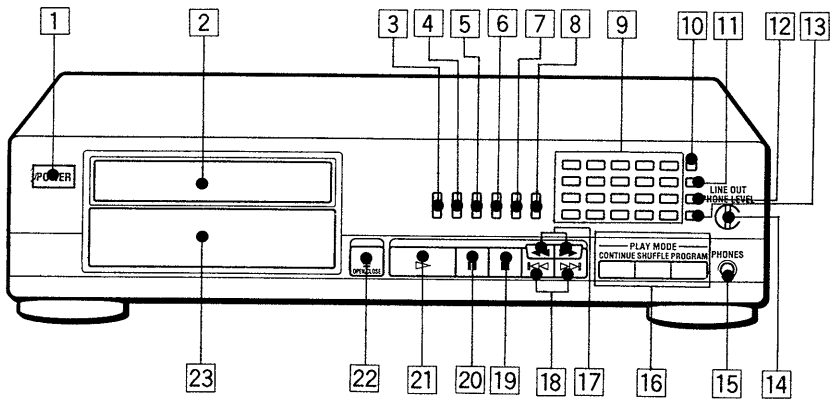
Insert a tapering driver into the aperture of the unit bottom, and turn in the direction of arrow.

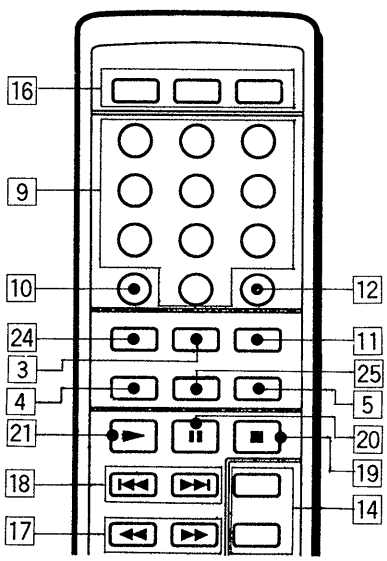
* To close the disc tray, turn the driver in the reverse direction.



SECTION 2
GENERAL

Identifying the Parts





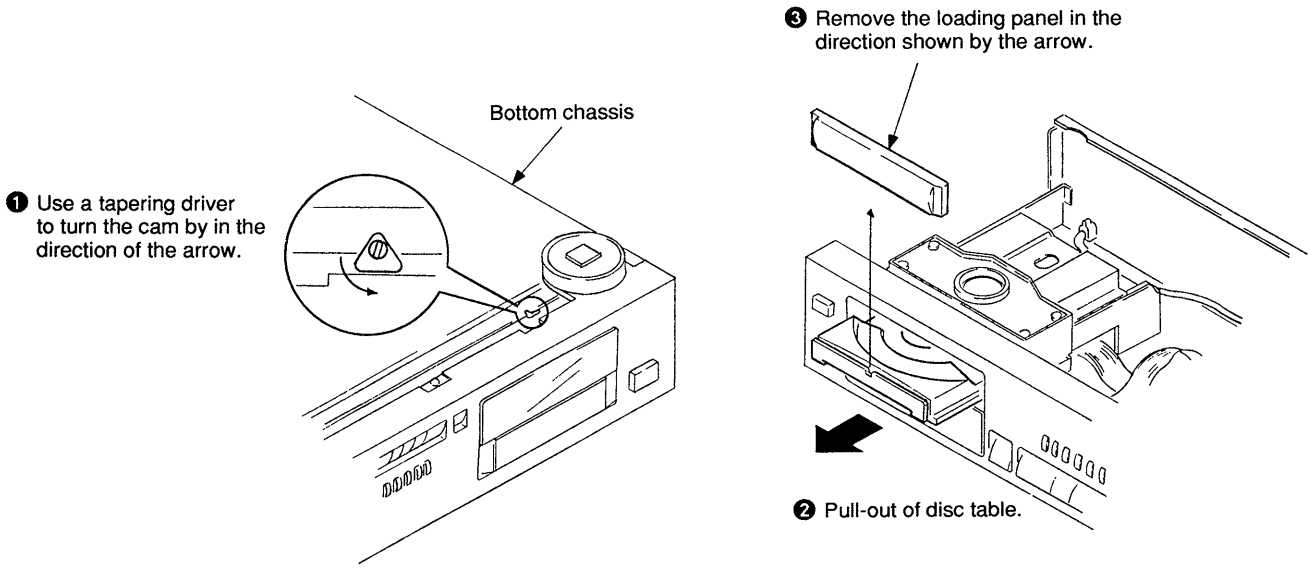
1. Power switch
2. Disc tray
3. TIME button
4. REPEAT button
5. FADER button
6. AUTO SPACE button
7. PEAK SEARCH button
8. EDIT/TIME FADE button
9. Number button
10. >20 (over 20) button
    (>10 (over 10) button on the remote commander)
11. CHECK (Program check) button
12. CLEAR (Program clear) button
13. MUSIC SCAN button
14. LINE OUT/PHONE LEVEL control
    (LINE OUT LEVEL +/- buttons on the remote commander)
15. PHONES jack
16. Play mode buttons
    CONTINUE button
    SHUFFLE button
    PROGRAM button
17. ◄◄/►► (manual search) buttons
18. ⏮/⏭ (AMS*) buttons
19. ■ (stop) button
20. ❚❚ (pause) button
21. ▻ (play) button
22. ⏏ OPEN/CLOSE button
23. Display
24. DISPLAY OFF button
25. A ↔ B button

* AMS is the addreviation of Automatic Music Sensor.

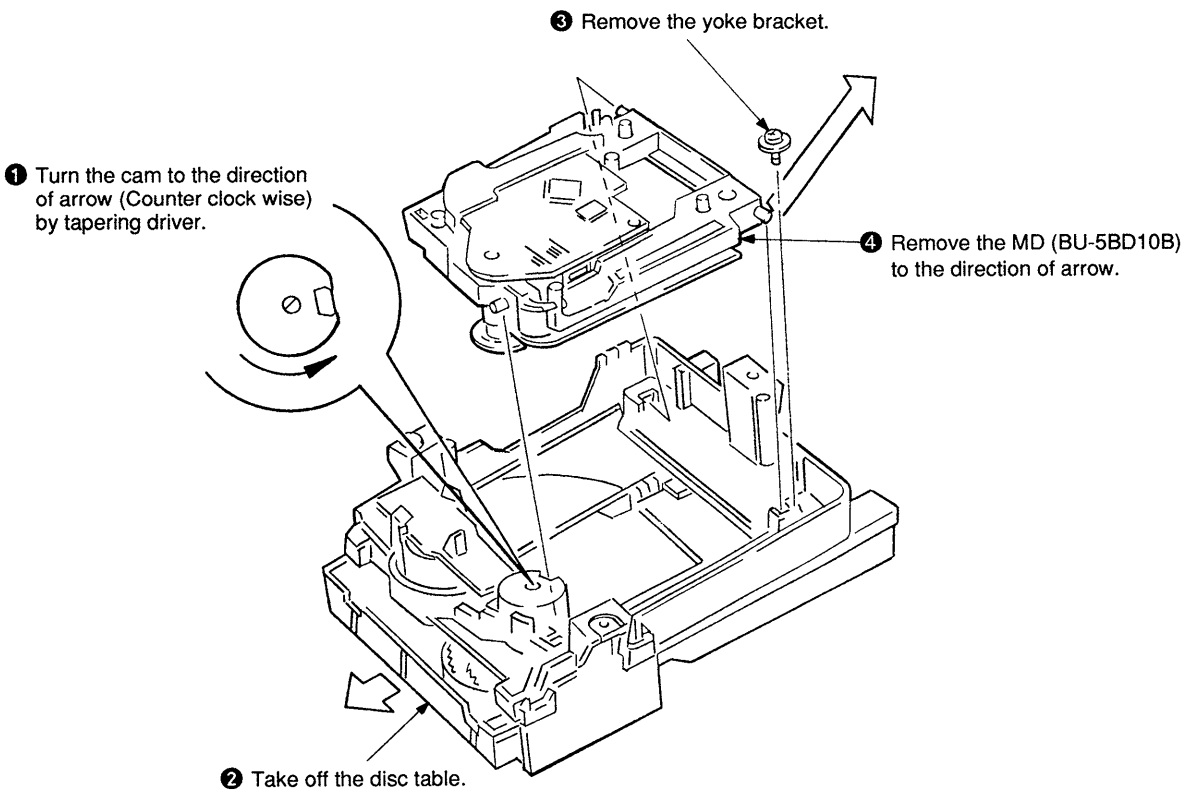
SECTION 3
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

3-1. REMOVAL OF LOADING PANEL


❸ Remove the loading panel in the direction shown by the arrow.
Bottom chassis
❶ Use a tapering driver to turn the cam by in the direction of the arrow.
❷ Pull-out of disc table.

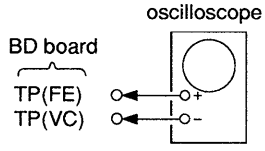
3-2. REMOVAL OF MD (BU-5BD10B) BLOCK


❸ Remove the yoke bracket.
❶ Turn the cam to the direction of arrow (Counter clock wise) by tapering driver.
❹ Remove the MD (BU-5BD10B) to the direction of arrow.
❷ Take off the disc table.

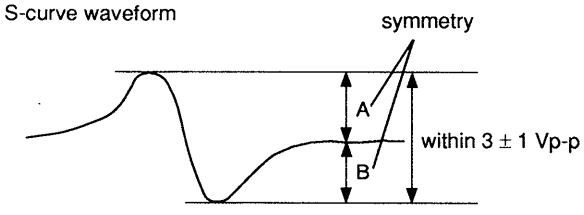
SECTION 4
ELECTRICAL BLOCK CHECKING

Note :
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



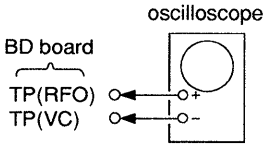
Procedure :
1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3±1 Vp-p.



6. After check, remove the lead wire connected in step 2.

Note : • Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

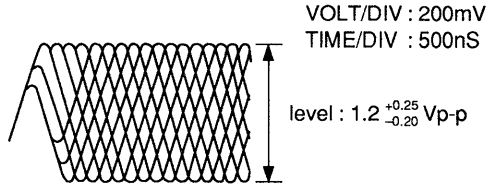


Procedure :
1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

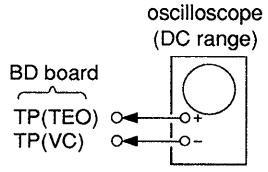
Note :

Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

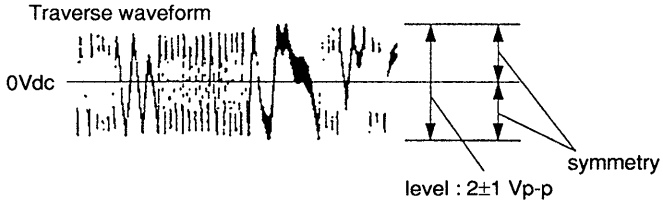
RF signal waveform



E-F Balance Check



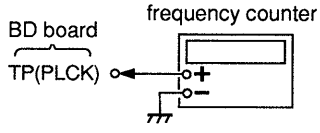
Procedure :
1. Connect test point TP (ADJ) on MAIN board to ground and TP(TEI : IC101 ㉗ PIN) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check.



6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

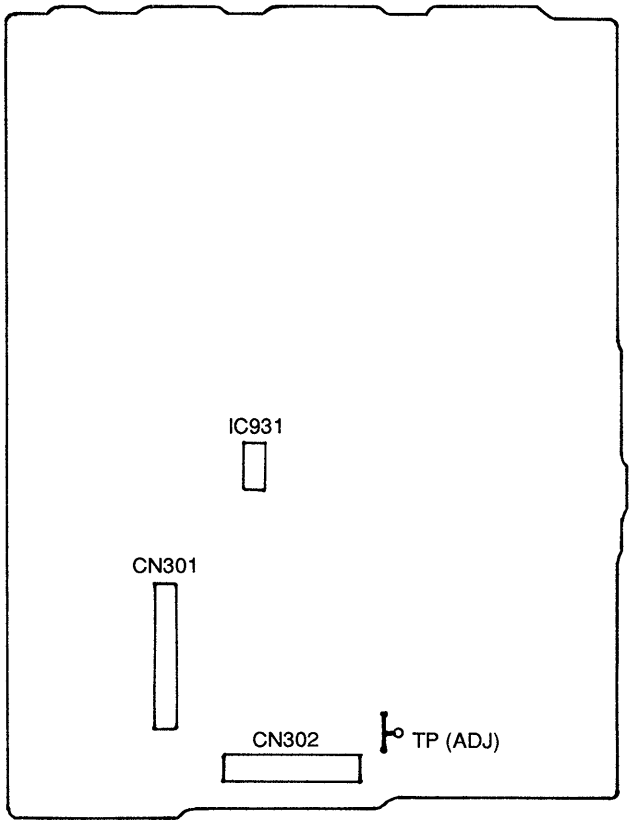
Procedure :
1. Connect frequency counter to test point (PLCK : IC101 ㊸ PIN) with lead wire.



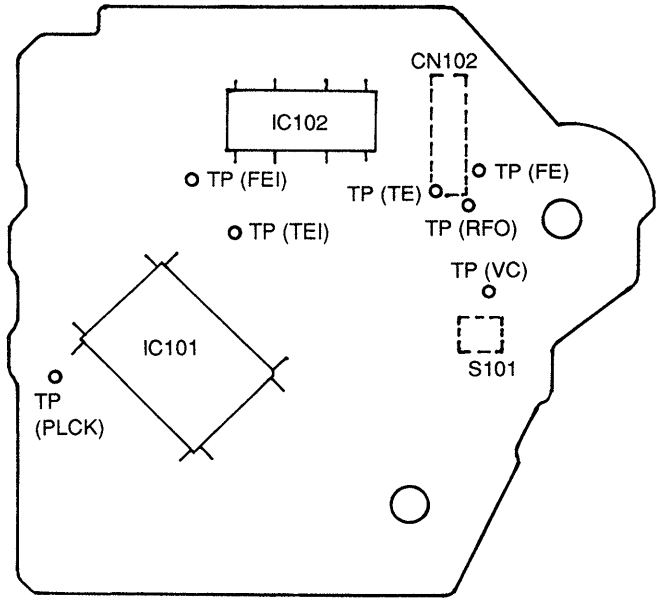
2. Turned Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location :

[MAIN BOARD] — Component Side —

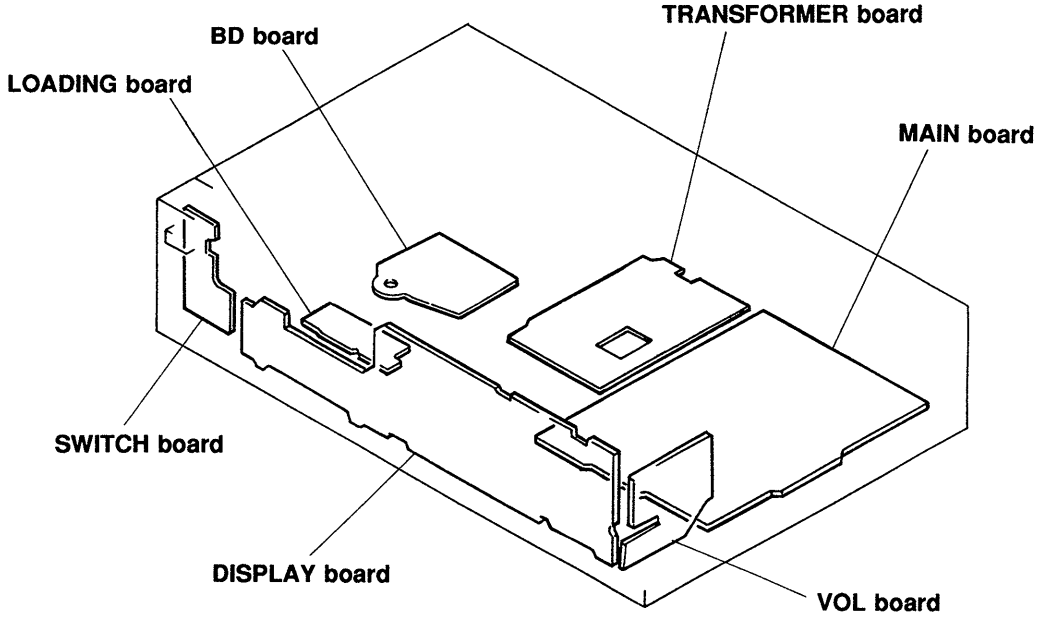


[BD BOARD] — Conductor Side —

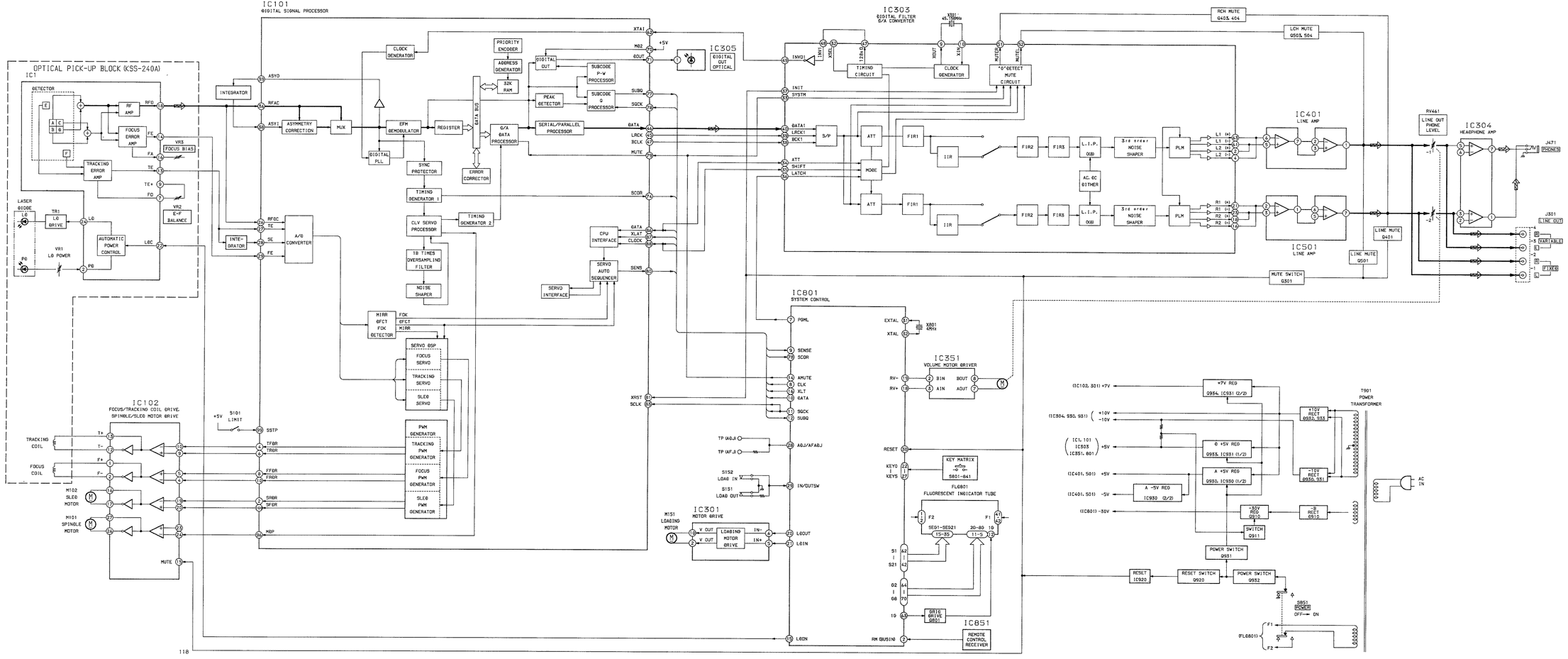


SECTION 5
DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



5-2. BLOCK DIAGRAM



5-3. PRINTED WIRING BOARDS

• See page 7 for Circuit Boards Location.

• **Semiconductor Location**

Ref. No.	Location
D301	H-20
D302	G-16
D303	E-19
D910	F-20
D911	H-20
D912	G-20
D913	G-20
D930	F-19
D931	F-19
D932	G-19
D933	G-19
D934	E-19
D935	D-19
D936	E-18
D937	F-18
IC101	D-2
IC102	B-3
IC301	H-20
IC303	F-17
IC304	E-19
IC305	C-16
IC351	B-23
IC401	D-17
IC501	D-18
IC801	I-8
IC851	E-11
IC920	H-16
IC930	E-19
IC931	G-18
Q301	D-19
Q401	C-16
Q403	C-16
Q404	G-16
Q501	D-19
Q503	D-19
Q504	G-16
Q801	J-13
Q910	G-20
Q911	H-19
Q920	H-16
Q930	E-18
Q931	F-18
Q932	H-19
Q933	G-18
Q934	G-19

Note:

- : parts extracted from the component side.
- ● : Through hole.
- : Pattern on the side which seen.
- : Pattern of the rear side.
- : Chip components extracted from the rear side.

[BD BOARD]

[LOADING BOARD]

[SWITCH BOARD]

[DISPLAY BOARD]

[MAIN BOARD]

[VOL BOARD]

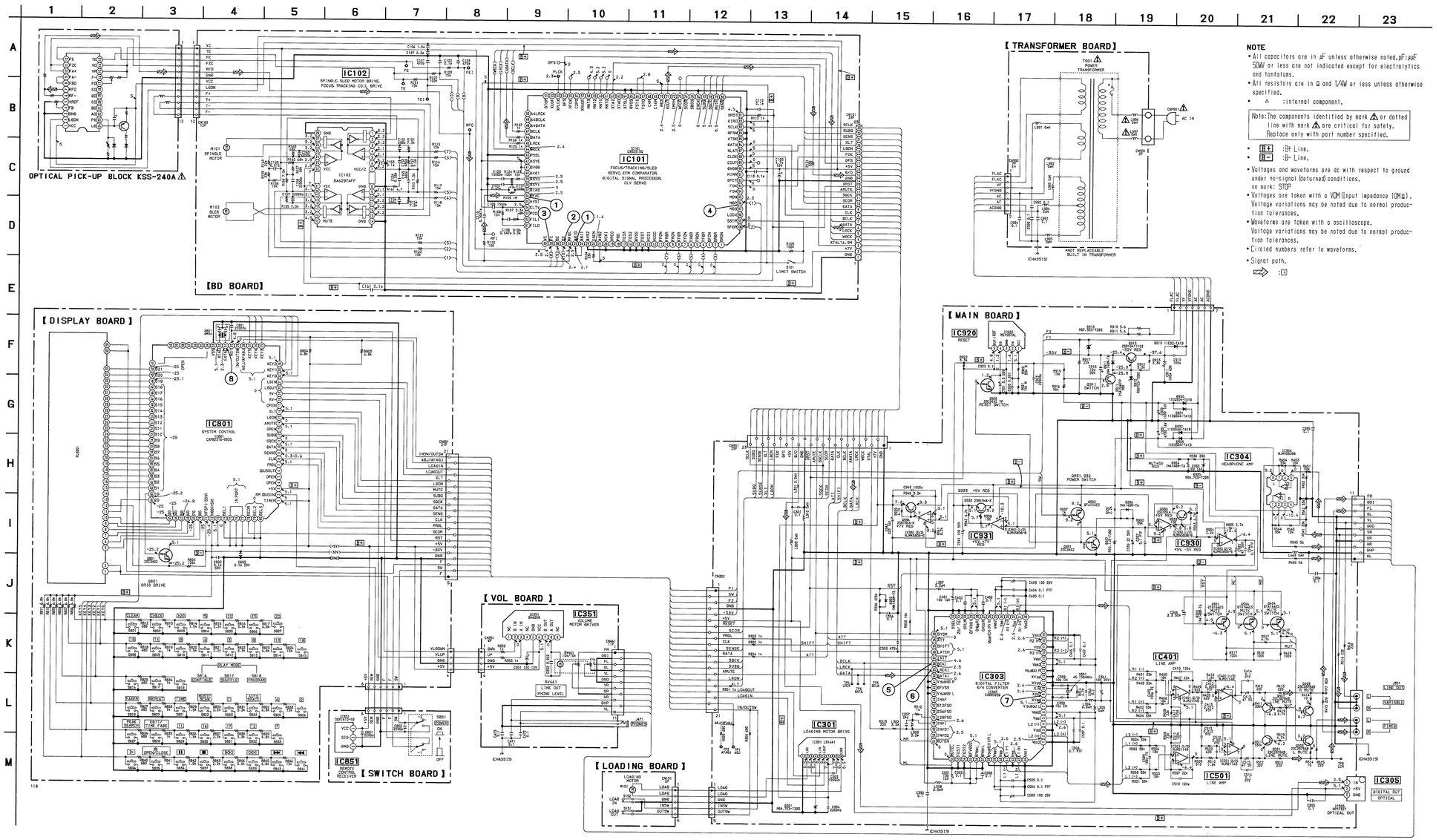
[TRANSFORMER BOARD]

(OPTICAL PICK-UP BLOCK KSS-240A)

* NOT REPLACEABLE BUILT IN TRANSFORMER

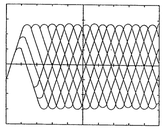
5-4. SCHEMATIC DIAGRAM

- See page 19 for IC Pin Function.
- See page 20 for IC Block Diagrams.

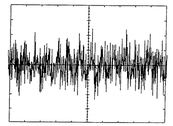

【BD BOARD】
【DISPLAY BOARD】
【MAIN BOARD】
【TRANSFORMER BOARD】
【VOL BOARD】
【SWITCH BOARD】
【LOADING BOARD】
OPTICAL PICK-UP BLOCK KSS-240A
IC102
SPINDLE,SLED MOTOR DRIVE, FOCUS TRACKING COIL DRIVE
IC101
FOCUS/TRACKING/SLED SERVO,EFM COMPARATOR, DIGITAL SIGNAL PROCESSOR, CLV SERVO
IC801
SYSTEM CONTROL
IC920
RESET
IC303
DIGITAL FILTER D/A CONVERTER
IC304
HEADPHONE AMP
IC930
+5V,-5V REG
IC931
+5V,+7V REG
IC401
LINE AMP
IC501
LINE AMP
IC301
LOADING MOTOR DRIVE
IC351
VOLUME MOTOR DRIVE
IC851
REMOTE CONTROL RECEIVER
IC305
DIGITAL OUT OPTICAL
NOTE
• All capacitors are in μF unless otherwise noted. pF: pμF
50WV or less are not indicated except for electrolytics and tantaluns.
• All resistors are in Ω and 1/4W or less unless otherwise specified.
• △ : internal component.
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
• B+ : B+ Line.
• B- : B- Line.
• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark: STOP
• Voltages are taken with a VOM (input impedance 10MΩ).
Voltage variations may be noted due to normal production tolerances.
• Waveforms are taken with a oscilloscope.
Voltage variations may be noted due to normal production tolerances.
• Circled numbers refer to waveforms.
• Signal path.
: CD

• Waveforms

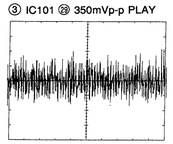
① IC101 ㉘, ㊱ 1.1Vp-p PLAY



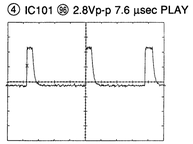
② IC101 ㉗ 570mVp-p PLAY



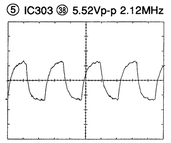
③ IC101 ㉙ 350mVp-p PLAY



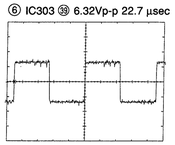
④ IC101 ㉕ 2.8Vp-p 7.6 μsec PLAY



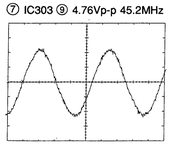
⑤ IC303 ㊳ 5.52Vp-p 2.12MHz



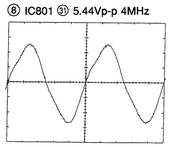
⑥ IC303 ㊴ 6.32Vp-p 22.7 μsec



⑦ IC303 ⑨ 4.76Vp-p 45.2MHz



⑧ IC801 ㉛ 5.44Vp-p 4MHz



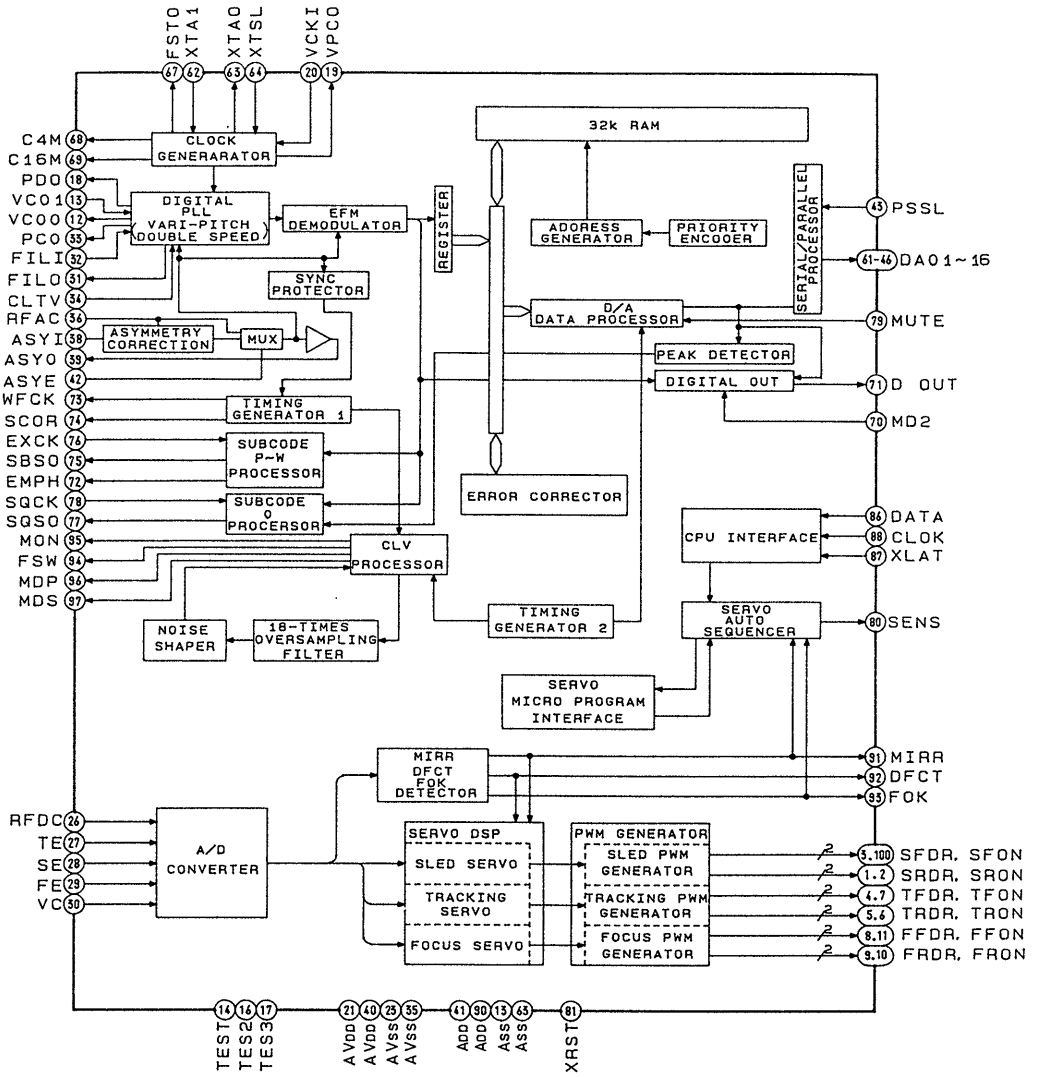
5-5. IC PIN FUNCTION

- **IC801 (CXP82316-052Q)**

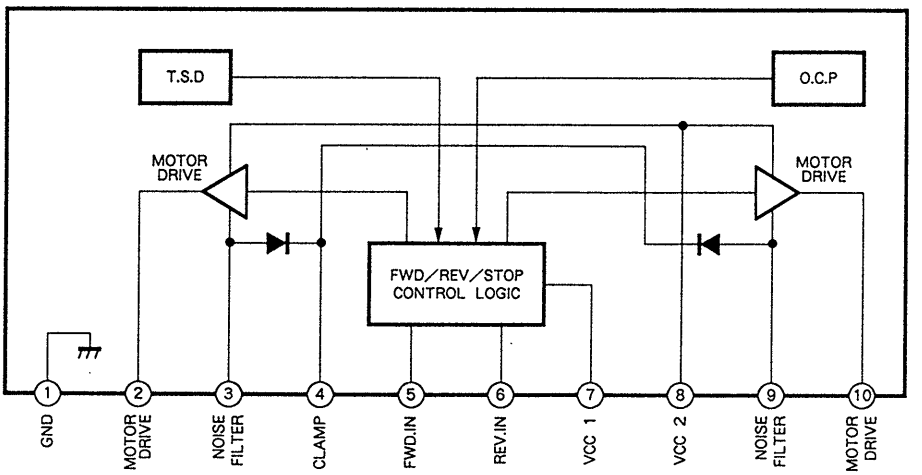
Pin No.	Pin Name	I/O	Function
1	TIMER	–	Connected to +5V.
2	RM (BUSIN)	I	Audio bus input.
3	+5V	–	Connected to +5V.
4	OPEN	–	Not used. (open)
5	OPEN	–	
6	(BUS-OUT)	–	
7	PRGL	O	Latch signal output to digital filter (IC303).
8	CLK	O	Serial clock output.
9	SENSE	I	SENSE signal input.
10	DATA	O	Serial data output.
11	SQCK	O	Read out clock output for subcode Q data.
12	SUBQ	I	Subcode Q data input.
13	OPEN	–	Not used. (open)
14	AMUTE	O	Analog muting control signal output.
15	LDON	O	Optical pickup laser diode control output.
16	XLT	O	Serial data latch signal output.
17	OPEN	–	Not used. (open)
18	RV+	O	Remote commander volume +.
19	RV–	O	Remote commander volume –.
20	LDOUT	O	Loading motor control signal output.
21	LDIN	O	
22 to 27	KEY0 to KEY5	I	Key input. (S801 to S841)
28	ADJ/AFADJ	–	ADJ, AFJ test pin.
29	IN/OUTSW	I	Loading IN/OUT switch input.
30	RST	I	Reset signal input.
31	EXTAL	I	Clock input. (4 MHz)
32	XTAL	O	Clock output. (4 MHz)
33	Vss	–	GND
34 to 41	OPEN	–	Not used. (open)
42 to 62	SEG1 to SEG21	O	FL segment output.
63 to 70	1G to 8G	O	FL grid output.
71	VFDP (–30V)	–	–30V pin for FL display tube.
72	V_{DD} (+5V)	–	+5V pin.
73	——	–	
74	SEL1	–	Connected to GND.
75	IN PORT	–	Connected to +5 V.
76	IN PORT	–	
77	IN PORT	–	
78	SCOR	I	Read out timing signal input for subcode Q data.
79	SEL2	–	Connected to GND.
80	SEL3	–	Connected to GND.

5-6. IC BLOCK DIAGRAMS

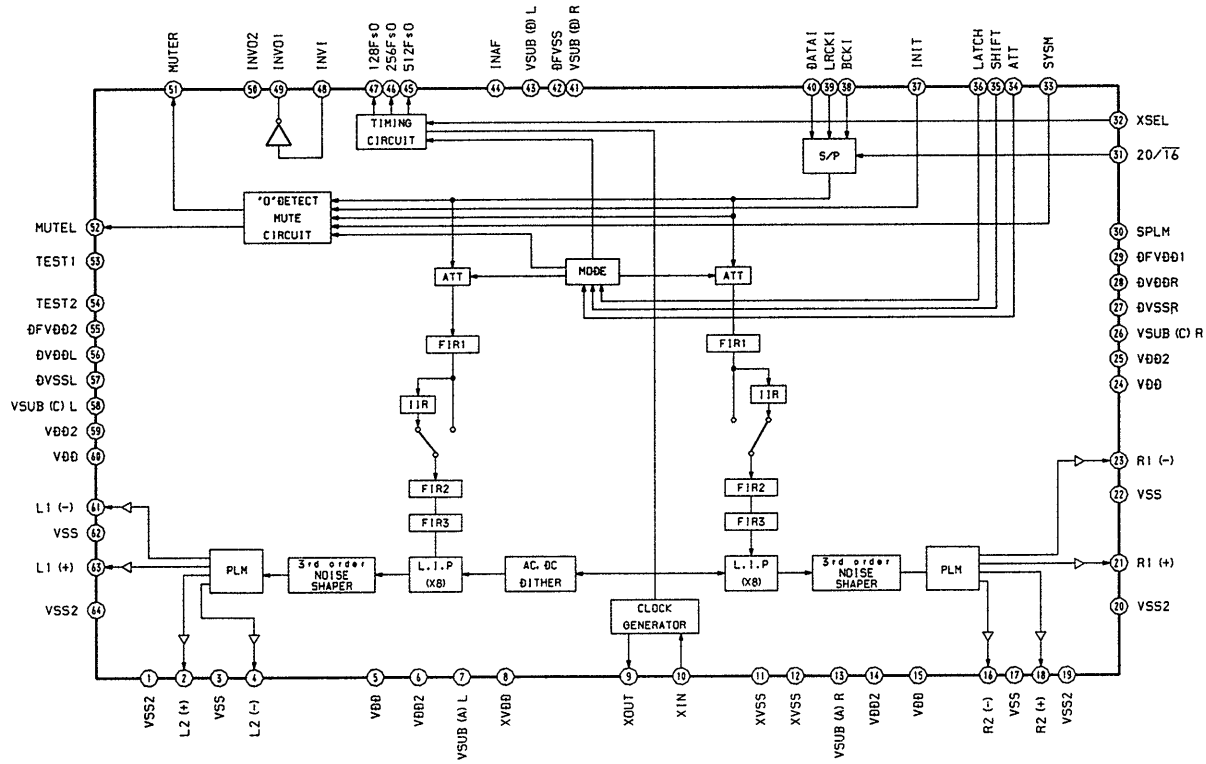
IC101 CXD2515Q



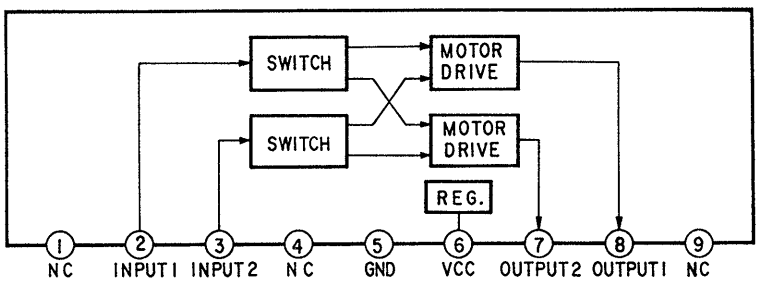
IC301 LB1641



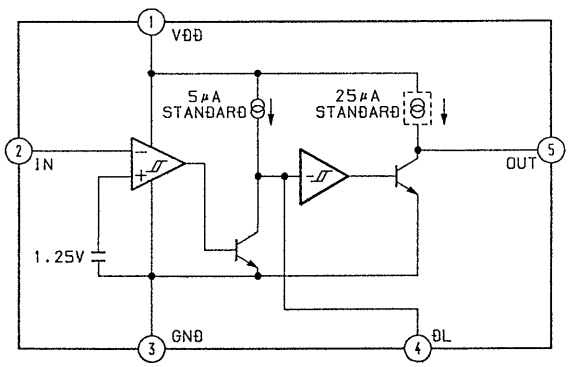
IC303 CXD8505Q



IC351 BA6208



IC920 M51957AL



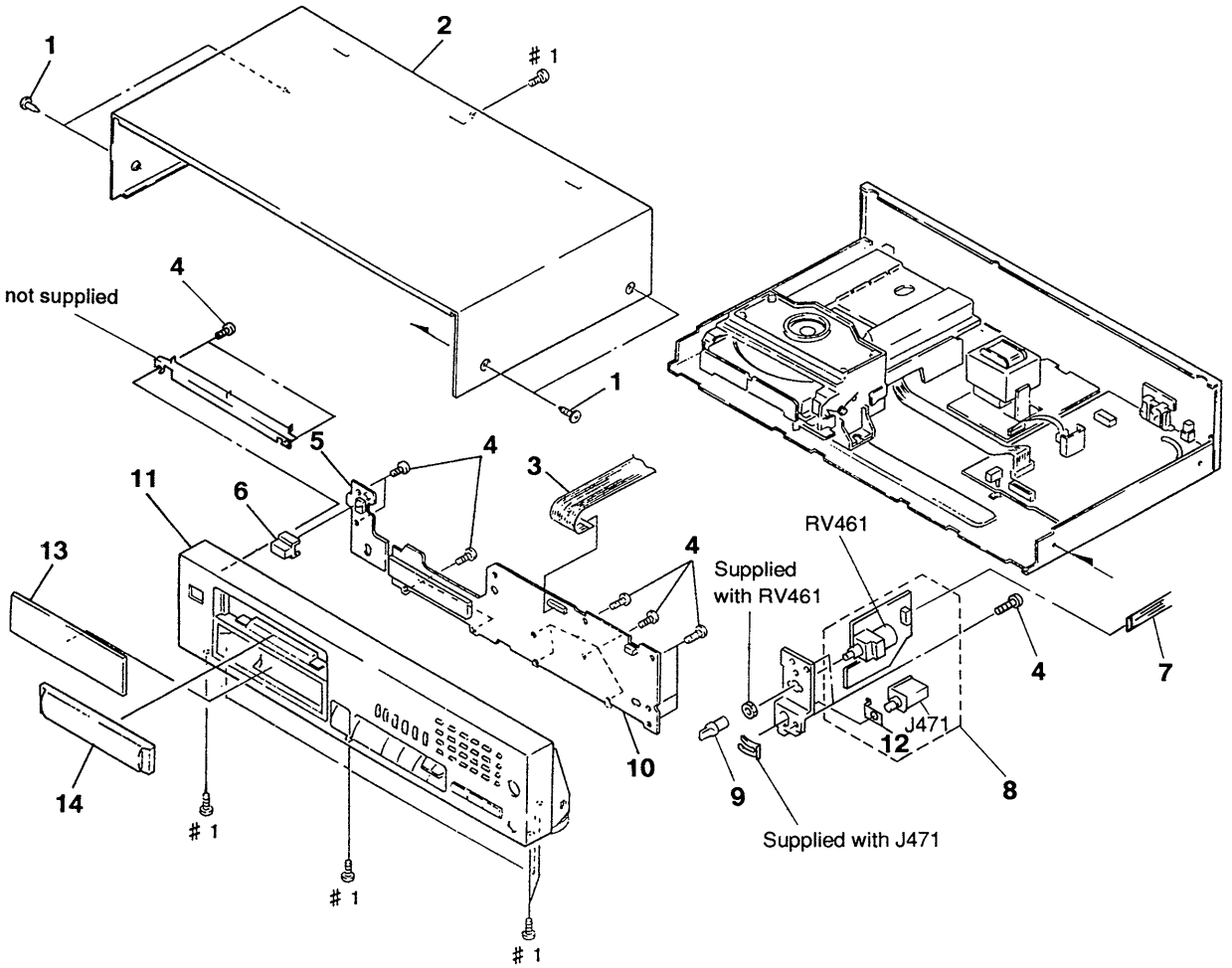
SECTION 6
EXPLODED VIEWS

NOTE:

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

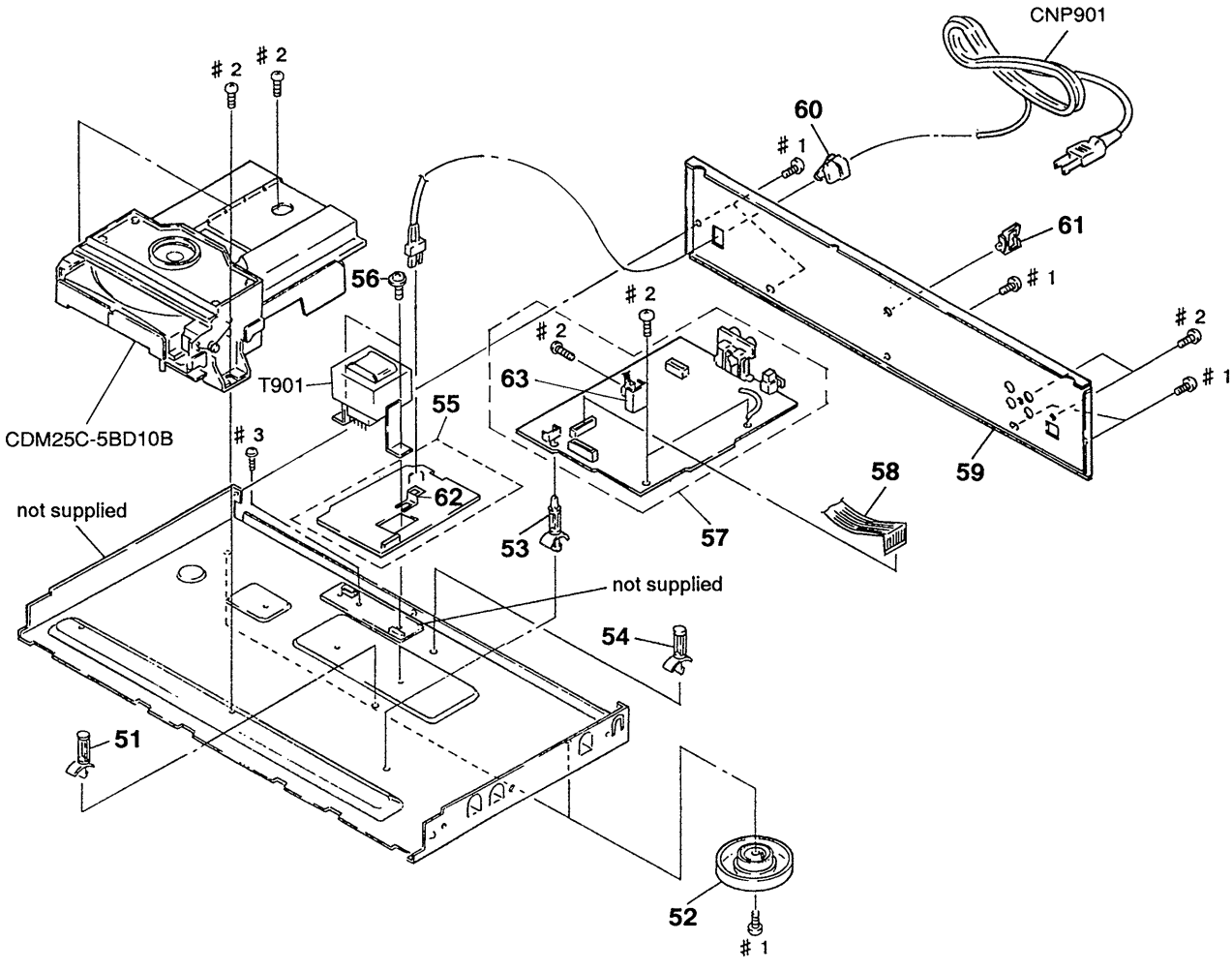
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

6-1. CASE AND FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	3-363-099-01	SCREW (CASE 3 TP2)	
* 2	4-937-817-01	CASE	
3	1-751-947-11	WIRE (FLAT TYPE) (21 CORE)	
4	4-951-620-01	SCREW (2.6X8), +BVTP	
* 5	1-655-765-11	SWITCH BOARD	
6	4-947-034-01	BUTTON (POWER)	
7	1-751-712-11	WIRE (FLAT TYPE) (11 CORE)	
* 8	1-655-766-11	VOL BOARD	
9	4-950-189-01	KNOB (A) (VOL)	
* 10	A-4673-493-A	DISPLAY BOARD, COMPLETE	
11	X-4945-693-1	PANEL ASSY, FRONT	
* 12	4-962-201-01	PLATE (HP), GROUND	
13	4-962-199-01	PLATE, INDICATION	
14	4-971-681-21	PANEL, LOADING	
J471	1-750-162-61	JACK (LARGE TYPE) (PHONES)	
RV461	1-223-875-11	RES, VAR (MOTOR DRIVING TYPE) (LINE OUT, PHONE LEVEL)	

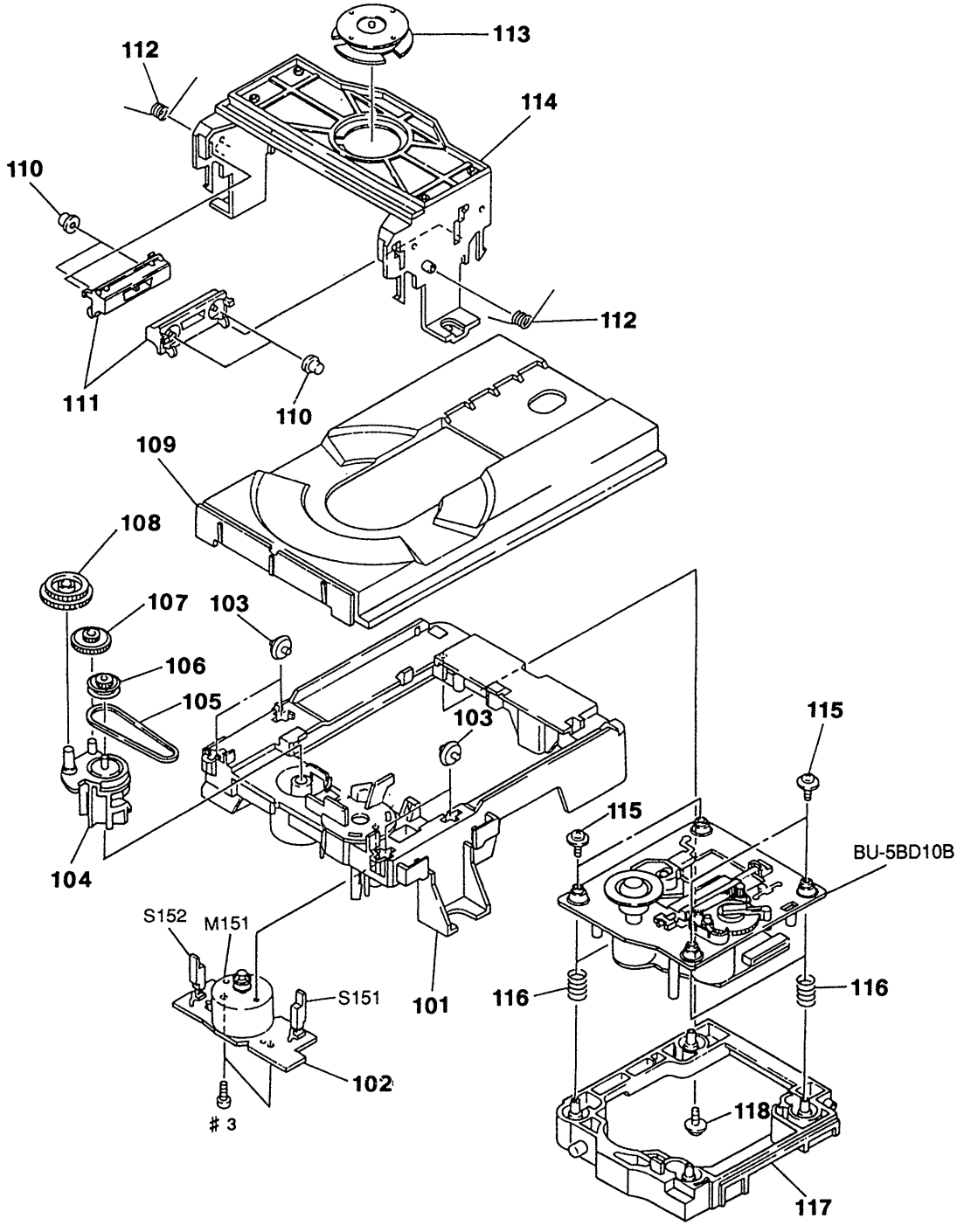
6-2. CHASSIS SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

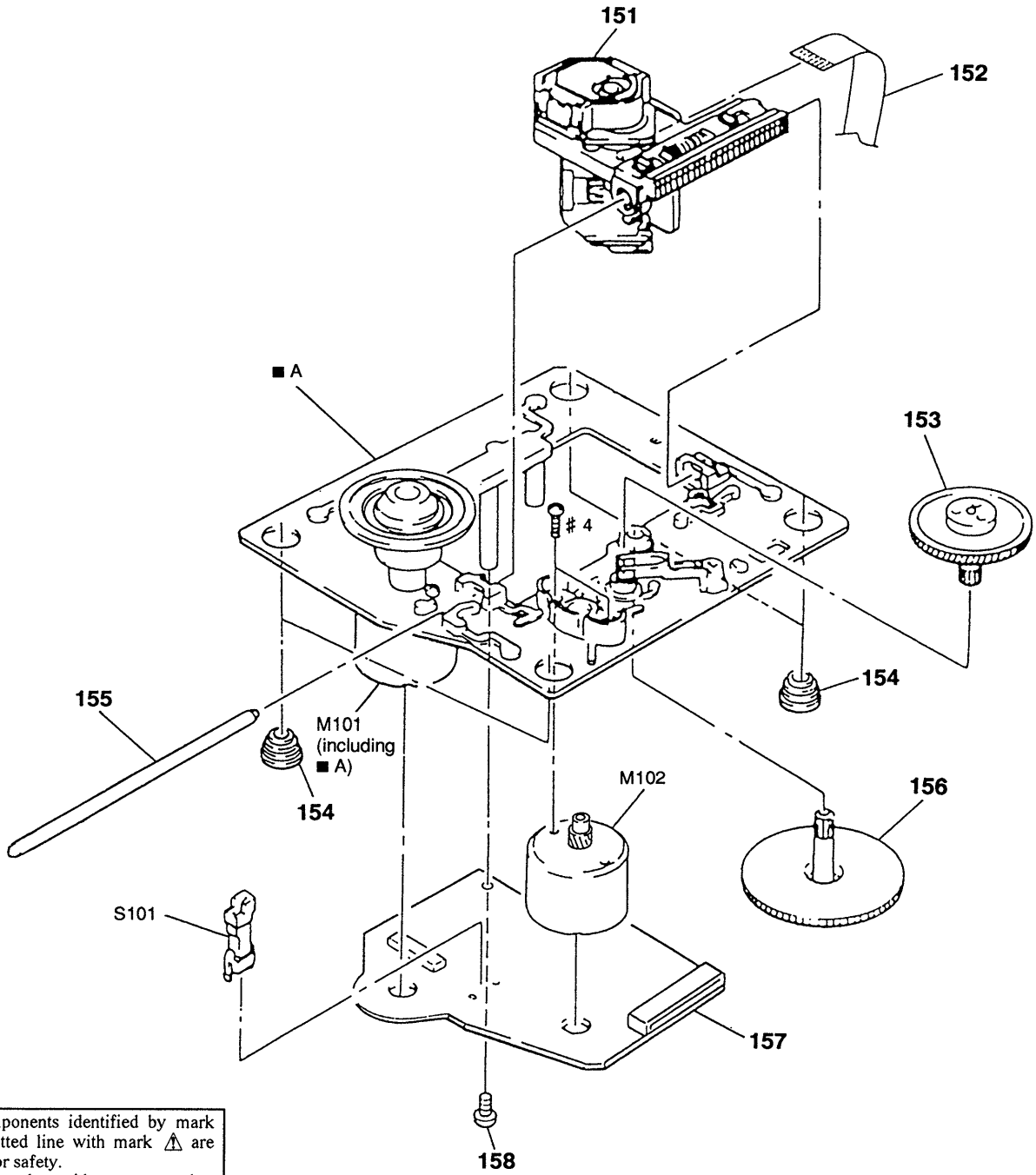
Ref. No.	Part No.	Description	Remark
* 51	4-944-316-01	HOLDER, PC BOARD	
52	4-956-885-01	FOOT (F58175S2W)	
* 53	4-924-098-31	HOLDER, PC BOARD	
* 54	3-349-025-41	HOLDER, PC BOARD	
* 55	1-655-763-11	TRANSFORMER BOARD	
56	2-383-566-00	SCREW	
* 57	A-4673-492-A	MAIN BOARD, COMPLETE	
58	1-696-760-11	WIRE (FLAT TYPE) (23 CORE)	
* 59	4-956-654-41	PANEL, BACK	
* 60	3-703-244-00	BUSHING (2104), CORD	
* 61	4-949-235-01	HOOK	
* 62	4-962-200-01	PLATE (TR), GROUND	
* 63	3-309-144-21	HEAT SINK	
⚠CNP901	1-590-836-11	CORD, POWER	
⚠T901	1-449-921-11	TRANSFORMER, POWER	

6-3. MECHANISM DECK SECTION (CDM25C-5BD10B)



Ref.No.	Part No.	Description	Remark
* 101	4-954-190-01	BASE (MD)	
* 102	1-646-970-11	LOADING BOARD	
103	4-954-193-01	ROLLER (A)	
104	4-933-109-01	CAM	
105	4-927-649-01	BELT	
106	4-927-651-01	PULLEY (S)	
107	4-967-268-01	GEAR (C)	
108	4-933-107-01	GEAR (PL)	
109	4-961-794-01	TABLE, DISK	
110	4-954-194-01	ROLLER (B)	
111	4-954-199-01	PLATE, SLIDE	
112	4-954-195-01	SPRING, TORSION	
* 113	1-452-538-11	MAGNET	
* 114	4-954-192-01	HOLDER (M)	
115	4-933-134-01	SCREW (+PTPWH M2.6X6)	
116	4-959-996-01	SPRING (932), COMPRESSION	
117	4-933-129-01	HOLDER (BU)	
* 118	4-917-583-21	BRACKET, YOKE	
M151	A-4604-363-A	MOTOR (L) ASSY (LOADING MOTOR)	
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)	
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)	

6-4. BASE UNIT SECTION (BU-5BD10B)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
⚠151	8-848-144-11	OPTICAL PICK-UP BLOCK KSS-240A	
152	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
153	4-917-567-01	GEAR (M)	
154	4-951-940-01	INSULATOR (BU)	
155	4-917-565-01	SHAFT, SLED	
156	4-917-564-01	GEAR (P), FLATNESS	
* 157	A-4649-432-A	BD BOARD, COMPLETE	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE MOTOR)	
M102	X-4917-504-1	MOTOR ASSY (SLED MOTOR)	
S101	1-572-085-11	SWITCH, LEAF (LIMIT SWITCH)	

BD

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB..., uPC...: μPC..., uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref.No.	Part No.	Description			Remark
*	A-4649-432-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10% 50V	
C102	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
C103	1-163-005-11	CERAMIC CHIP	470PF	10% 50V	
C105	1-135-155-21	TANTALUM CHIP	4.7uF	10% 16V	
C106	1-164-346-11	CERAMIC CHIP	1uF	16V	
C107	1-164-505-11	CERAMIC CHIP	2.2uF	16V	
C108	1-163-035-00	CERAMIC CHIP	0.047uF	50V	
C109	1-163-011-11	CERAMIC CHIP	0.0015uF	10% 50V	
C110	1-163-017-00	CERAMIC CHIP	0.0047uF	5% 50V	
C111	1-163-251-11	CERAMIC CHIP	100PF	5% 50V	
C112	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
C113	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
C123	1-164-232-11	CERAMIC CHIP	0.01uF	50V	
C124	1-164-005-11	CERAMIC CHIP	0.47uF	25V	
C151	1-163-007-11	CERAMIC CHIP	680PF	10% 50V	
C152	1-163-007-11	CERAMIC CHIP	680PF	10% 50V	
C153	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
C154	1-164-336-11	CERAMIC CHIP	0.33uF	25V	
C155	1-163-007-11	CERAMIC CHIP	680PF	10% 50V	
C156	1-163-007-11	CERAMIC CHIP	680PF	10% 50V	
C157	1-163-033-91	CERAMIC CHIP	0.022uF	50V	
C158	1-163-033-91	CERAMIC CHIP	0.022uF	50V	
C159	1-163-023-00	CERAMIC CHIP	0.015uF	5% 50V	
C160	1-163-019-00	CERAMIC CHIP	0.0068uF	10% 50V	
C161	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
		< CONNECTOR >			
* CN101	1-568-865-11	SOCKET, CONNECTOR 23P			
CN102	1-568-795-11	SOCKET, CONNECTOR 12P			
		< IC >			
IC101	8-752-361-94	IC CXD2515Q			
IC102	8-759-071-79	IC BA6297AFP			
		< RESISTOR >			
R101	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R102	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R103	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R104	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R105	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R106	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R107	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R108	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R109	1-216-121-00	METAL CHIP	1M	5% 1/10W	
R110	1-216-025-11	METAL GLAZE	100	5% 1/10W	
R112	1-216-049-11	METAL GLAZE	1K	5% 1/10W	
R113	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R114	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R117	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R118	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R121	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R122	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R123	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R124	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R125	1-216-049-11	METAL GLAZE	1K	5% 1/10W	
R126	1-216-049-11	METAL GLAZE	1K	5% 1/10W	
R127	1-216-049-11	METAL GLAZE	1K	5% 1/10W	
R131	1-216-037-00	METAL CHIP	330	5% 1/10W	
R151	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R152	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R153	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R154	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R155	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R156	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R157	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R158	1-216-076-00	METAL CHIP	13K	5% 1/10W	
R159	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R160	1-216-081-00	METAL CHIP	22K	5% 1/10W	
R161	1-216-308-00	METAL CHIP	4.7	5% 1/10W	
R162	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R163	1-216-093-00	METAL CHIP	68K	5% 1/10W	
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT SWITCH)			

****

Ref.No.	Part No.	Description			Remark
*	A-4673-493-A	DISPLAY BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C801	1-161-494-00	CERAMIC	0.022uF		25V
C802	1-164-159-11	CERAMIC	0.1uF		50V
C803	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN801	1-568-838-11	SOCKET, CONNECTOR 21P			
		< FLUORESCENT INDICATOR >			
FLD801	1-519-757-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC801	8-752-861-38	IC CXP82316-052Q			
		< TRANSISTOR >			
Q801	8-729-900-80	TRANSISTOR DTC114ES			
		< RESISTOR >			
R803	1-249-427-11	CARBON	6.8K	5%	1/4W
R804	1-249-427-11	CARBON	6.8K	5%	1/4W
R805	1-249-441-11	CARBON	100K	5%	1/4W
R806	1-249-427-11	CARBON	6.8K	5%	1/4W
R807	1-249-427-11	CARBON	6.8K	5%	1/4W
R808	1-249-427-11	CARBON	6.8K	5%	1/4W
R809	1-249-427-11	CARBON	6.8K	5%	1/4W
R810	1-249-427-11	CARBON	6.8K	5%	1/4W
R811	1-249-427-11	CARBON	6.8K	5%	1/4W
R812	1-249-415-11	CARBON	680	5%	1/4W
R813	1-249-417-11	CARBON	1K	5%	1/4W
R814	1-249-419-11	CARBON	1.5K	5%	1/4W
R815	1-249-421-11	CARBON	2.2K	5%	1/4W
R816	1-249-423-11	CARBON	3.3K	5%	1/4W
R817	1-249-427-11	CARBON	6.8K	5%	1/4W
R818	1-249-415-11	CARBON	680	5%	1/4W
R819	1-249-417-11	CARBON	1K	5%	1/4W
R820	1-249-419-11	CARBON	1.5K	5%	1/4W
R821	1-249-421-11	CARBON	2.2K	5%	1/4W
R822	1-249-423-11	CARBON	3.3K	5%	1/4W
R823	1-249-427-11	CARBON	6.8K	5%	1/4W
R824	1-249-431-11	CARBON	15K	5%	1/4W
R825	1-249-415-11	CARBON	680	5%	1/4W
R826	1-249-417-11	CARBON	1K	5%	1/4W
R827	1-249-415-11	CARBON	680	5%	1/4W
R828	1-249-417-11	CARBON	1K	5%	1/4W
R829	1-249-419-11	CARBON	1.5K	5%	1/4W
R830	1-249-421-11	CARBON	2.2K	5%	1/4W
R831	1-249-423-11	CARBON	3.3K	5%	1/4W
R832	1-249-427-11	CARBON	6.8K	5%	1/4W
R833	1-249-431-11	CARBON	15K	5%	1/4W
R834	1-249-415-11	CARBON	680	5%	1/4W
R835	1-249-417-11	CARBON	1K	5%	1/4W
R836	1-249-419-11	CARBON	1.5K	5%	1/4W
R837	1-249-421-11	CARBON	2.2K	5%	1/4W
R838	1-249-423-11	CARBON	3.3K	5%	1/4W
R839	1-249-427-11	CARBON	6.8K	5%	1/4W
R840	1-249-415-11	CARBON	680	5%	1/4W
R841	1-249-417-11	CARBON	1K	5%	1/4W
R842	1-249-419-11	CARBON	1.5K	5%	1/4W
R843	1-249-421-11	CARBON	2.2K	5%	1/4W
R844	1-249-423-11	CARBON	3.3K	5%	1/4W
R845	1-249-427-11	CARBON	6.8K	5%	1/4W
R846	1-249-431-11	CARBON	15K	5%	1/4W
		< SWITCH >			
S801	1-554-303-21	SWITCH, TACTILE (CLEAR)			
S802	1-554-303-21	SWITCH, TACTILE (CHECK)			
S803	1-554-303-21	SWITCH, TACTILE (>20)			
S804	1-554-303-21	SWITCH, TACTILE (5)			
S805	1-554-303-21	SWITCH, TACTILE (10)			
S806	1-554-303-21	SWITCH, TACTILE (15)			
S807	1-554-303-21	SWITCH, TACTILE (20)			
S808	1-554-303-21	SWITCH, TACTILE (19)			
S809	1-554-303-21	SWITCH, TACTILE (14)			
S810	1-554-303-21	SWITCH, TACTILE (9)			
S811	1-554-303-21	SWITCH, TACTILE (4)			
S812	1-554-303-21	SWITCH, TACTILE (3)			
S813	1-554-303-21	SWITCH, TACTILE (8)			
S814	1-554-303-21	SWITCH, TACTILE (13)			
S815	1-554-303-21	SWITCH, TACTILE (18)			
S816	1-554-303-21	SWITCH, TACTILE (CONTINUE)			
S817	1-554-303-21	SWITCH, TACTILE (SHUFFLE)			
S818	1-554-303-21	SWITCH, TACTILE (PROGRAM)			
S819	1-554-303-21	SWITCH, TACTILE (FADER)			
S820	1-554-303-21	SWITCH, TACTILE (REPEAT)			
S821	1-554-303-21	SWITCH, TACTILE (TIME)			
S822	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)			
S823	1-554-303-21	SWITCH, TACTILE (1)			
S824	1-554-303-21	SWITCH, TACTILE (AUTO SPACE)			
S825	1-554-303-21	SWITCH, TACTILE (6)			
S826	1-554-303-21	SWITCH, TACTILE (2)			
S827	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)			
S828	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)			
S829	1-554-303-21	SWITCH, TACTILE (11)			
S830	1-554-303-21	SWITCH, TACTILE (16)			
S831	1-554-303-21	SWITCH, TACTILE (17)			
S832	1-554-303-21	SWITCH, TACTILE (12)			

DISPLAY | LOADING | MAIN

Ref.No.	Part No.	Description			Remark
S833	1-554-303-21	SWITCH, TACTILE (7)			
S834	1-554-303-21	SWITCH, TACTILE (▷)			
S835	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)			
S836	1-554-303-21	SWITCH, TACTILE (▮▮)			
S837	1-554-303-21	SWITCH, TACTILE (■)			
S838	1-554-303-21	SWITCH, TACTILE (⏮◁)			
S839	1-554-303-21	SWITCH, TACTILE (▷⏭)			
S840	1-554-303-21	SWITCH, TACTILE (▶▶▮)			
S841	1-554-303-21	SWITCH, TACTILE (▮◀◀)			
		< VIBRATOR >			
X801	1-577-358-21	VIBRATOR, CERAMIC (4MHz)			
**********					
*	1-646-970-11	LOADING BOARD			
		**********			
		< CONNECTOR >			
* CN151	1-568-943-11	PIN, CONNECTOR 5P			
		< SWITCH >			
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)			
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)			
**********					
*	A-4673-492-A	MAIN BOARD, COMPLETE			
		**********			
*	3-309-144-21	HEAT SINK			
	7-685-871-01	SCREW +BVTT 3X6 (S)			
		< CAPACITOR >			
C301	1-164-159-11	CERAMIC	0.1uF		50V
C303	1-162-306-11	CERAMIC	0.01uF	30%	16V
C304	1-161-494-00	CERAMIC	0.022uF		25V
C305	1-164-159-11	CERAMIC	0.1uF		50V
C306	1-126-962-11	ELECT	3.3uF	20%	50V
C353	1-162-290-31	CERAMIC	470PF	10%	50V
C356	1-164-159-11	CERAMIC	0.1uF		50V
C357	1-162-208-31	CERAMIC	24PF	5%	50V
C358	1-102-947-00	CERAMIC	10PF	5%	50V
C359	1-102-947-00	CERAMIC	10PF	5%	50V
C360	1-130-495-00	MYLAR	0.1uF	5%	50V
C361	1-124-122-11	ELECT	100uF	20%	50V
C392	1-164-159-11	CERAMIC	0.1uF		50V
C394	1-164-159-11	CERAMIC	0.1uF		50V
C395	1-164-159-11	CERAMIC	0.1uF		50V
C401	1-126-101-11	ELECT	100uF	20%	16V
C402	1-164-159-11	CERAMIC	0.1uF		50V
C403	1-124-122-11	ELECT	100uF	20%	50V
C404	1-130-495-00	MYLAR	0.1uF	5%	50V
C405	1-130-495-00	MYLAR	0.1uF	5%	50V
C406	1-130-495-00	MYLAR	0.1uF	5%	50V
C407	1-130-495-00	MYLAR	0.1uF	5%	50V
C408	1-164-159-11	CERAMIC	0.1uF		50V
C409	1-107-611-11	MICA	100PF	5%	500V
C410	1-102-816-00	CERAMIC	120PF	5%	50V
C411	1-102-816-00	CERAMIC	120PF	5%	50V
C412	1-106-343-00	MYLAR	1000PF	5%	200V
C413	1-130-484-00	MYLAR	0.012uF	5%	50V
C414	1-130-495-00	MYLAR	0.1uF	5%	50V
C415	1-124-910-11	ELECT	47uF	20%	50V
C501	1-126-101-11	ELECT	100uF	20%	16V
C502	1-164-159-11	CERAMIC	0.1uF		50V
C503	1-124-122-11	ELECT	100uF	20%	50V
C504	1-130-495-00	MYLAR	0.1uF	5%	50V
C505	1-130-495-00	MYLAR	0.1uF	5%	50V
C506	1-130-495-00	MYLAR	0.1uF	5%	50V
C507	1-130-495-00	MYLAR	0.1uF	5%	50V
C508	1-164-159-11	CERAMIC	0.1uF		50V
C509	1-107-611-11	MICA	100PF	5%	500V
C510	1-102-816-00	CERAMIC	120PF	5%	50V
C511	1-102-816-00	CERAMIC	120PF	5%	50V
C512	1-106-343-00	MYLAR	1000PF	5%	200V
C513	1-130-484-00	MYLAR	0.012uF	5%	50V
C514	1-130-495-00	MYLAR	0.1uF	5%	50V
C515	1-124-910-11	ELECT	47uF	20%	50V
C910	1-107-611-11	MICA	100PF	5%	500V
C911	1-124-572-11	ELECT	100uF	20%	63V
C915	1-124-907-11	ELECT	10uF	20%	50V
C920	1-162-294-31	CERAMIC	0.001uF	10%	50V
C921	1-126-962-11	ELECT	3.3uF	20%	50V
C922	1-164-159-11	CERAMIC	0.1uF		50V
C923	1-161-494-00	CERAMIC	0.022uF		25V
C930	1-126-013-11	ELECT	1000uF	20%	16V
C931	1-126-016-11	ELECT	4700uF	20%	16V
C932	1-126-101-11	ELECT	100uF	20%	16V
C935	1-124-910-11	ELECT	47uF	20%	50V
C937	1-130-495-00	MYLAR	0.1uF	5%	50V
C939	1-124-916-11	ELECT	22uF	20%	63V
C941	1-126-052-11	ELECT	100uF	20%	50V
C942	1-124-120-11	ELECT	220uF	20%	25V
C943	1-162-294-31	CERAMIC	0.001uF	10%	50V
C944	1-130-495-00	MYLAR	0.1uF	5%	50V
		< CONNECTOR >			
CN301	1-750-428-11	CONNECTOR, FFC/FPC 23P			
CN302	1-750-426-11	CONNECTOR, FFC/FPC 21P			
* CN304	1-750-416-11	CONNECTOR, FFC/FPC 11P			

Ref.No.	Part No.	Description	Remark
		< DIODE >	
D301	8-719-109-82	DIODE RD4.7ES-B3	
D302	8-719-987-63	DIODE 1N4148M	
D303	8-719-987-63	DIODE 1N4148M	
D910	8-719-200-82	DIODE 11ES2	
D911	8-719-987-63	DIODE 1N4148M	
D912	8-719-113-76	DIODE RD27ES-T2B2	
D913	8-719-110-04	DIODE RD7.5ES-B3	
D930	8-719-210-21	DIODE 11EQS04	
D931	8-719-210-21	DIODE 11EQS04	
D932	8-719-210-21	DIODE 11EQS04	
D933	8-719-210-21	DIODE 11EQS04	
D934	8-719-987-63	DIODE 1N4148M	
D935	8-719-109-82	DIODE RD4.7ES-B3	
D936	8-719-987-63	DIODE 1N4148M	
D937	8-719-114-30	DIODE RD5.1JS-B2	
		< IC >	
IC301	8-759-822-09	IC LB1641	
IC303	8-759-287-70	IC CXD8505Q	
IC304	8-759-710-59	IC NJM4580D-D	
IC305	8-749-921-12	IC GP1F32T	
IC401	8-759-712-02	IC NJM2114D	
IC501	8-759-712-02	IC NJM2114D	
IC920	8-759-636-16	IC M51957AL	
IC930	8-759-710-59	IC NJM4580D-D	
IC931	8-759-710-59	IC NJM4580D-D	
		< JACK >	
J301	1-569-443-21	JACK, PIN 4P (LINE OUT)(VARIABLE, FIXED)	
		< COIL >	
L301	1-410-322-11	INDUCTOR 3.3uH	
L302	1-410-322-11	INDUCTOR 3.3uH	
L303	1-410-503-11	INDUCTOR 3.3uH	
L304	1-410-507-11	INDUCTOR 6.8uH	
L305	1-412-473-21	INDUCTOR 0uH	
L306	1-412-473-21	INDUCTOR 0uH	
L307	1-410-322-11	INDUCTOR 3.3uH	
L308	1-410-322-11	INDUCTOR 3.3uH	
L309	1-412-473-21	INDUCTOR 0uH	
L310	1-412-473-21	INDUCTOR 0uH	
L663	1-412-473-21	INDUCTOR 0uH	
		< TRANSISTOR >	
Q301	8-729-900-65	TRANSISTOR DTA144ES	
Q401	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q403	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q404	8-729-900-65	TRANSISTOR DTA144ES	
Q501	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q503	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q504	8-729-900-65	TRANSISTOR DTA144ES	
Q910	8-729-019-64	TRANSISTOR 2SB1041	
Q911	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q920	8-729-900-80	TRANSISTOR DTC114ES	
Q930	8-729-104-18	TRANSISTOR 2SC3514	
Q931	8-729-900-80	TRANSISTOR DTC114ES	
Q932	8-729-900-65	TRANSISTOR DTA144ES	
Q933	8-729-021-82	TRANSISTOR 2SD2396	
Q934	8-729-021-82	TRANSISTOR 2SD2396	
		< RESISTOR >	
R300	1-249-415-11	CARBON 680 5% 1/4W	
R301	1-249-417-11	CARBON 1K 5% 1/4W	
R302	1-249-417-11	CARBON 1K 5% 1/4W	
R303	1-249-417-11	CARBON 1K 5% 1/4W	
R304	1-249-417-11	CARBON 1K 5% 1/4W	
R305	1-249-415-11	CARBON 680 5% 1/4W	
R306	1-247-895-00	CARBON 470K 5% 1/4W	
R308	1-249-429-11	CARBON 10K 5% 1/4W	
R312	1-249-417-11	CARBON 1K 5% 1/4W	
R313	1-249-409-11	CARBON 220 5% 1/4W	
R314	1-249-425-11	CARBON 4.7K 5% 1/4W	
R317	1-249-441-11	CARBON 100K 5% 1/4W	
R401	1-249-435-11	CARBON 33K 5% 1/4W	
R402	1-249-435-11	CARBON 33K 5% 1/4W	
R403	1-249-435-11	CARBON 33K 5% 1/4W	
R404	1-249-435-11	CARBON 33K 5% 1/4W	
R405	1-249-432-11	CARBON 18K 5% 1/4W	
R406	1-249-432-11	CARBON 18K 5% 1/4W	
R407	1-249-433-11	CARBON 22K 5% 1/4W	
R408	1-249-433-11	CARBON 22K 5% 1/4W	
R409	1-247-830-11	CARBON 910 5% 1/4W	
R410	1-249-420-11	CARBON 1.8K 5% 1/4W	
R411	1-247-891-00	CARBON 330K 5% 1/4W	
R412	1-249-409-11	CARBON 220 5% 1/4W	
R413	1-249-409-11	CARBON 220 5% 1/4W	
R414	1-249-393-11	CARBON 10 5% 1/4W	
R415	1-249-409-11	CARBON 220 5% 1/4W	
R416	1-249-409-11	CARBON 220 5% 1/4W	
R417	1-249-425-11	CARBON 4.7K 5% 1/4W	
R418	1-249-441-11	CARBON 100K 5% 1/4W	
R419	1-249-425-11	CARBON 4.7K 5% 1/4W	
R420	1-247-826-00	CARBON 620 5% 1/4W	
R451	1-249-435-11	CARBON 33K 5% 1/4W	
R452	1-249-435-11	CARBON 33K 5% 1/4W	
R453	1-249-429-11	CARBON 10K 5% 1/4W	
R454	1-249-435-11	CARBON 33K 5% 1/4W	
R455	1-249-402-11	CARBON 56 5% 1/4W	
R501	1-249-435-11	CARBON 33K 5% 1/4W	
R502	1-249-435-11	CARBON 33K 5% 1/4W	

MAIN SWITCH TRANSFORMER VOL

Ref.No.	Part No.	Description				Remark
R503	1-249-435-11	CARBON	33K	5%	1/4W	
R504	1-249-435-11	CARBON	33K	5%	1/4W	
R505	1-249-432-11	CARBON	18K	5%	1/4W	
R506	1-249-432-11	CARBON	18K	5%	1/4W	
R507	1-249-433-11	CARBON	22K	5%	1/4W	
R508	1-249-433-11	CARBON	22K	5%	1/4W	
R509	1-247-830-11	CARBON	910	5%	1/4W	
R510	1-249-420-11	CARBON	1.8K	5%	1/4W	
R511	1-247-891-00	CARBON	330K	5%	1/4W	
R512	1-249-409-11	CARBON	220	5%	1/4W	
R513	1-249-409-11	CARBON	220	5%	1/4W	
R514	1-249-393-11	CARBON	10	5%	1/4W	
R515	1-249-409-11	CARBON	220	5%	1/4W	
R516	1-249-409-11	CARBON	220	5%	1/4W	
R517	1-249-425-11	CARBON	4.7K	5%	1/4W	
R518	1-249-441-11	CARBON	100K	5%	1/4W	
R519	1-249-425-11	CARBON	4.7K	5%	1/4W	
R520	1-247-826-00	CARBON	620	5%	1/4W	
R541	1-249-435-11	CARBON	33K	5%	1/4W	
R542	1-249-435-11	CARBON	33K	5%	1/4W	
R543	1-249-429-11	CARBON	10K	5%	1/4W	
R544	1-249-435-11	CARBON	33K	5%	1/4W	
R545	1-249-402-11	CARBON	56	5%	1/4W	
R910	1-249-390-11	CARBON	5.6	5%	1/4W	
R911	1-249-390-11	CARBON	5.6	5%	1/4W	
R912	1-249-423-11	CARBON	3.3K	5%	1/4W	
R913	1-249-423-11	CARBON	3.3K	5%	1/4W	
R915	1-249-429-11	CARBON	10K	5%	1/4W	
R916	1-249-438-11	CARBON	56K	5%	1/4W	
R917	1-249-433-11	CARBON	22K	5%	1/4W	
R920	1-249-436-11	CARBON	39K	5%	1/4W	
R921	1-249-431-11	CARBON	15K	5%	1/4W	
R922	1-249-423-11	CARBON	3.3K	5%	1/4W	
R930	1-249-411-11	CARBON	330	5%	1/4W	
R931	1-249-421-11	CARBON	2.2K	5%	1/4W	
R932	1-249-436-11	CARBON	39K	5%	1/4W	
R933	1-247-807-31	CARBON	100	5%	1/4W	
R934	1-249-421-11	CARBON	2.2K	5%	1/4W	
R935	1-249-422-11	CARBON	2.7K	5%	1/4W	
R937	1-249-417-11	CARBON	1K	5%	1/4W	
R938	1-247-807-31	CARBON	100	5%	1/4W	
R939	1-249-425-11	CARBON	4.7K	5%	1/4W	
R940	1-249-423-11	CARBON	3.3K	5%	1/4W	
R941	1-249-428-11	CARBON	8.2K	5%	1/4W	
R942	1-249-425-11	CARBON	4.7K	5%	1/4W	
R943	1-249-425-11	CARBON	4.7K	5%	1/4W	
		< VIBRATOR >				
X301	1-579-161-11	VIBRATOR, CRYSTAL (45.1584MHz)				

Ref.No.	Part No.	Description			Remark
**********					
*	1-655-765-11	SWITCH BOARD			
		**********			
		< CAPACITOR >			
C851	1-161-494-00	CERAMIC	0.022uF	25V	
C852	1-161-494-00	CERAMIC	0.022uF	25V	
		< IC >			
IC851	8-741-810-59	IC SBX1610-59			
		< SWITCH >			
S851	1-554-118-00	SWITCH, PUSH (1 KEY)(POWER)			
**********					
*	1-655-763-11	TRANSFORMER BOARD			
		**********			
*	4-962-200-01	PLATE (TR), GROUND			
		< CAPACITOR >			
C991	1-164-159-11	CERAMIC	0.1uF	50V	
C992	1-164-159-11	CERAMIC	0.1uF	50V	
C993	1-164-159-11	CERAMIC	0.1uF	50V	
C994	1-164-159-11	CERAMIC	0.1uF	50V	
		< CONNECTOR >			
CN991	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P			
CN992	1-564-510-11	PLUG, CONNECTOR 7P			
		< COIL >			
L991	1-412-473-21	INDUCTOR	0uH		
L992	1-412-473-21	INDUCTOR	0uH		
L993	1-412-473-21	INDUCTOR	0uH		
L994	1-412-473-21	INDUCTOR	0uH		
L995	1-412-473-21	INDUCTOR	0uH		
⚠L996	1-412-473-21	INDUCTOR	0uH		
⚠L997	1-412-473-21	INDUCTOR	0uH		
**********					
*	1-655-766-11	VOL BOARD			
		*********			
*	4-962-201-01	PLATE (HP), GROUND			
		< CAPACITOR >			
C351	1-124-443-00	ELECT	100uF 20%	10V	
C352	1-161-494-00	CERAMIC	0.022uF	25V	
C471	1-164-159-11	CERAMIC	0.1uF	50V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description	Remark
C472	1-164-159-11	CERAMIC 0.1uF 50V	
C473	1-164-159-11	CERAMIC 0.1uF 50V	
		< CONNECTOR >	
* CN351	1-568-942-11	PIN, CONNECTOR 4P	
CN461	1-750-452-11	CONNECTOR, FFC/FPC 11P	
		< IC >	
IC351	8-759-962-08	IC BA6208	
		< JACK >	
J471	1-750-162-61	JACK (LARGE TYPE)(PHONES)	
		< RESISTOR >	
R352	1-249-417-11	CARBON 1K 5% 1/4W	
R353	1-249-417-11	CARBON 1K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV461	1-223-875-11	RES, VAR (MOTOR DRIVING TYPE) (LINE OUT, PHONE LEVEL)	
**********			
		MISCELLANEOUS	
		**********	
3	1-751-947-11	WIRE (FLAT TYPE) (21 CORE)	
7	1-751-712-11	WIRE (FLAT TYPE) (11 CORE)	
58	1-696-760-11	WIRE (FLAT TYPE) (23 CORE)	
⚠151	8-848-144-11	OPTICAL PICK-UP BLOCK KSS-240A	
152	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
⚠CNP901	1-590-836-11	CORD, POWER	
J471	1-750-162-61	JACK (LARGE TYPE)(PHONES)	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE MOTOR)	
M102	X-4917-504-1	MOTOR ASSY (SLED MOTOR)	
M151	A-4604-363-A	MOTOR (L) ASSY (LOADING MOTOR)	
RV461	1-223-875-11	RES, VAR (MOTOR DRIVING TYPE) (LINE OUT, PHONE LEVEL)	
S101	1-572-085-11	SWITCH, LEAF (LIMIT SWITCH)	
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)	
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)	
⚠T901	1-449-921-11	TRANSFORMER, POWER	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-473-125-11	REMOTE COMMANDER (RM-D820)	
	1-558-271-11	CORD, CONNECTION (AUDIO 108cm)	
	3-759-994-21	MANUAL, INSTRUCTION (ENGLISH)	
*	4-941-925-01	CUSHION	
	4-956-947-61	INDIVIDUAL CARTON	
*	4-962-615-01	COVER, BATTERY (for RM-D820)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-682-548-09	SCREW +BVTT 3X8 (S)	
#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#4	7-621-255-15	SCREW +P 2X3	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

9-960-087-11

Sony Corporation
Consumer A&V Products Company
Home A&V Products Div.

English
95D097032-1
Printed in Singapore
© 1995. 4
Published by Home A&V Products Div.
Quality Engineering Dept.

CDP-XA1ES

SONY

SERVICE MANUAL

US Model

SUPPLEMENT-1

File this supplement with the service manual.

Subject : 1. Service parts changed
2. Circuit change
3. ELECTRICAL BLOCK CHECKING change (BU-5BD20)
4. BD BOARD change

(ECN-CD500671)

- The two of base unit BU-5BD10 and BU-5BD20 in the CD section are used for this model.
  Refer to this service manual supplement-1 for the BD board of a set used BU-5BD20, and to the service manual is issued previously for the BD board of a set used BU-5BD10.

NOTE:

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

1. Service parts changed

Page	FORMER			NEW		
	Ref.No	Part No	Description	Ref.No	Part No	Description
22		Not supplied.		15	4-925-334-11	EMBLEM (5-A), SONY
23	* 61	4-949-235-01	HOOK			———

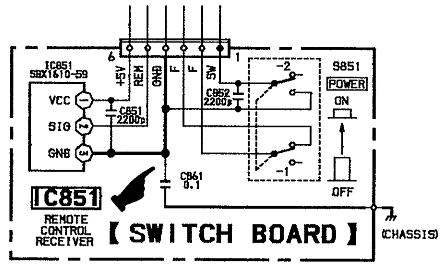
2. Circuit change

Page	FORMER					NEW				
	Ref.No	Part No	Description			Ref.No	Part No	Description		
27			** DISPLAY BOARD **					** DISPLAY BOARD **		
	IC801	8-752-861-38	IC CXP82316-052Q			IC801	8-752-868-32	IC CXP82316-059Q		
28			** MAIN BOARD **					** MAIN BOARD**		
			———			C393	1-162-294-31	CERAMIC	0.001uF	10% 50V
	C401	1-126-101-11	ELECT	100uF	20% 16V	C401	1-104-665-11	ELECT	100uF	20% 16V
	C501	1-126-101-11	ELECT	100uF	20% 16V	C501	1-104-665-11	ELECT	100uF	20% 16V
	C932	1-126-101-11	ELECT	100uF	20% 16V	C932	1-104-665-11	ELECT	100uF	20% 16V
			———			C951	1-126-963-11	ELECT	4.7uF	20% 50V
29	D937	8-719-114-30	DIODE RD5.1JS-B2			D937	8-719-114-26	DIODE RD4.7JS-B2		
	IC303	8-759-287-70	IC CXD8505Q			IC303	8-759-334-75	IC CXD8505AQ		
			———			L306	1-412-473-21	INDUCTOR	0uH	
			———			L321	1-412-473-21	INDUCTOR	0uH	
			———			L322	1-410-397-21	FERRITE BEAD INDUCTOR		
	R314	1-249-425-11	CARBON	4.7K	5% 1/4W	R314	1-249-429-11	CARBON	10K	5% 1/4W
			———			R341	1-249-411-11	CARBON	330	5% 1/4W
30	R920	1-249-436-11	CARBON	39K	5% 1/4W	R920	1-249-434-11	CARBON	27K	5% 1/4W
			** SWITCH BOARD **					** SWITCH BOARD **		
			———			C861	1-164-159-11	CERAMIC	0.1uF	50V
			———			* NO861	1-690-880-21	LEAD (WITH CONNECTOR)		
31			** VOL BOARD **					** VOL BOARD **		
			———			C481	1-162-294-31	CERAMIC	0.001uF	10% 50V
			———			L401	1-412-473-21	INDUCTOR	0uH	
			———			L402	1-412-473-21	INDUCTOR	0uH	
			———			L403	1-412-473-21	INDUCTOR	0uH	

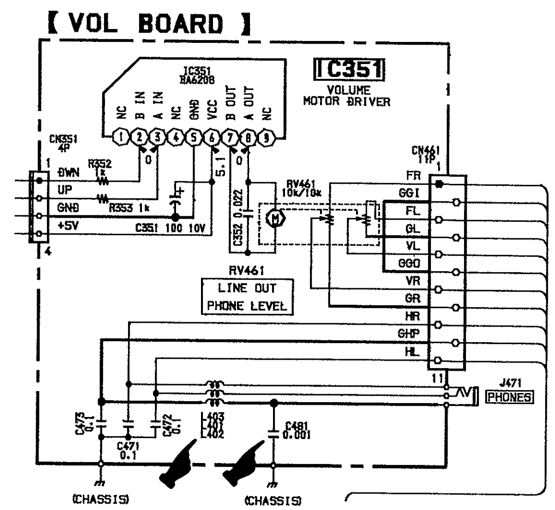
SCHEMATIC DIAGRAM

: Added portion

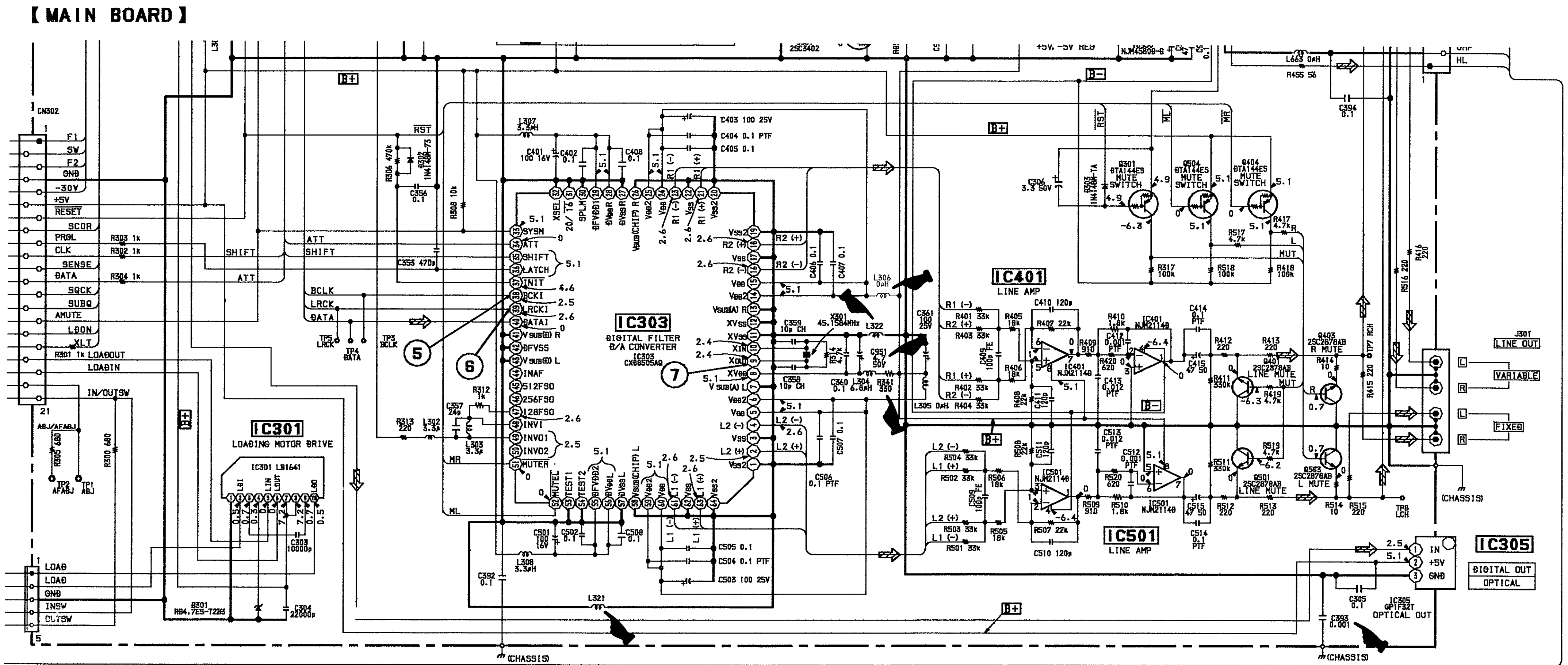
Location : M-6 to M-8



Location : K-8 to K-10

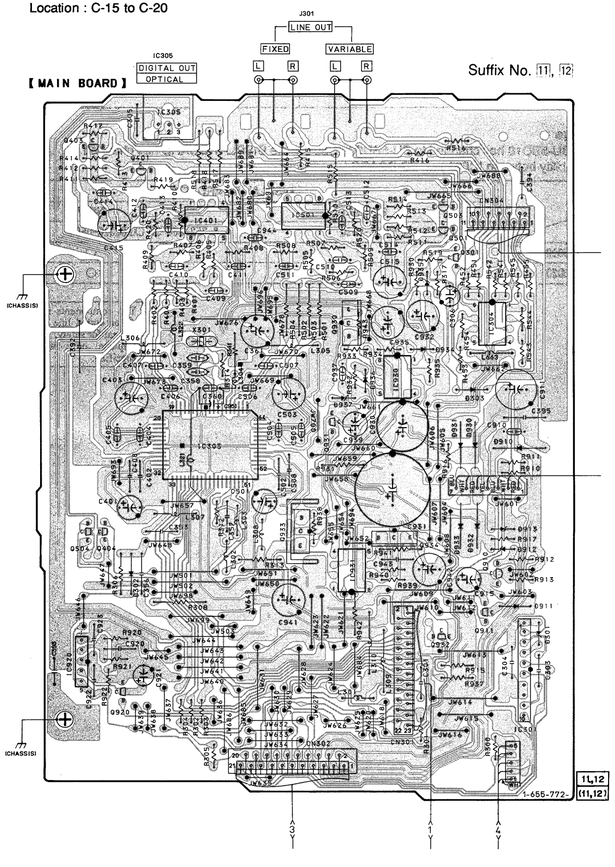

【VOL BOARD】
IC351
BA6208
IC351
VOLUME
MOTOR DRIVER
NC
B IN
A IN
NC
GND
VCC
B OUT
A OUT
NC
CN351
4P
DWN
UP
GND
+5V
R352 1k
R353 1k
C351 100 10V
C352 0.022
RV461
10k/10k
RV461
LINE OUT
PHONE LEVEL
CN461
11P
FR
GGI
FL
GL
VL
GGO
VR
GR
HR
GHP
HL
J471
PHONES
C473 0.1
C471 0.1
C472 0.1
L403
L401
L402
C481 0.001
(CHASSIS)
(CHASSIS)

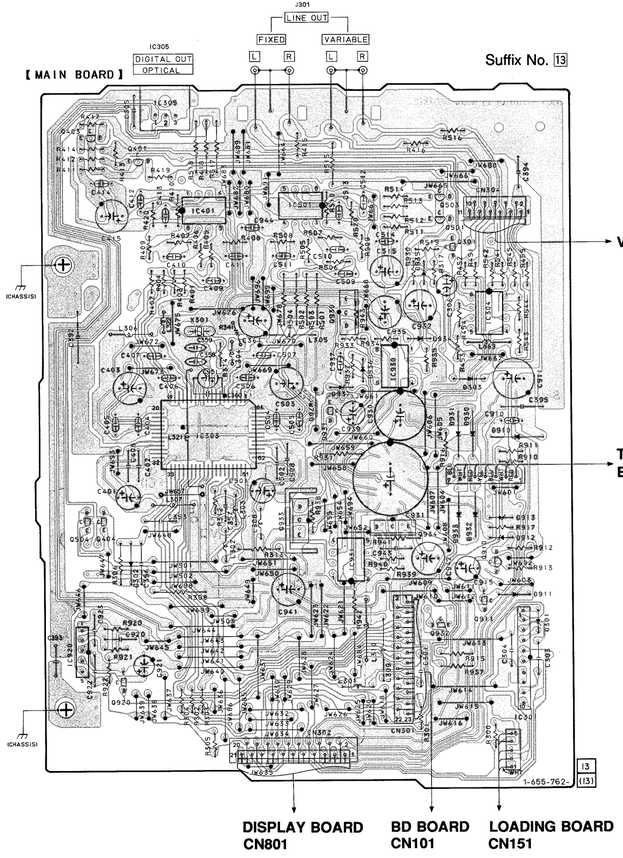
Location : J-12 to J-23


【MAIN BOARD】
CN302
F1
SW
F2
GND
-30V
+5V
RESET
SCOR
PRGL
CLK
SENSE
DATA
SQCK
SUBQ
AMUTE
LDON
XLT
R301 1k LOADOUT
LOADIN
IN/OUTSW
LOAD
LOAD
GND
INSW
OUTSW
IC301
LOADING MOTOR DRIVE
IC301 LB1641
C303
10000p
C304
22000p
IC303
DIGITAL FILTER
D/A CONVERTER
IC303
CXD8505AQ
X301
45.1584MHz
IC401
LINE AMP
IC501
LINE AMP
Q301
DTA144ES
MUTE
SWITCH
Q504
DTA144ES
MUTE
SWITCH
Q404
DTA144ES
MUTE
SWITCH
Q403
2SC2878AB
R MUTE
Q401
2SC2878AB
LINE MUTE
Q501
2SC2878AB
LINE MUTE
Q503
2SC2878AB
L MUTE
J301
LINE OUT
VARIABLE
FIXED
IC305
DIGITAL OUT
OPTICAL
IC305
GP1F32T
OPTICAL OUT
(CHASSIS)
(CHASSIS)
(CHASSIS)

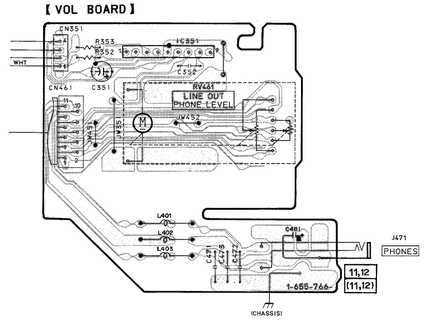
PRINTED WIRING BOARD

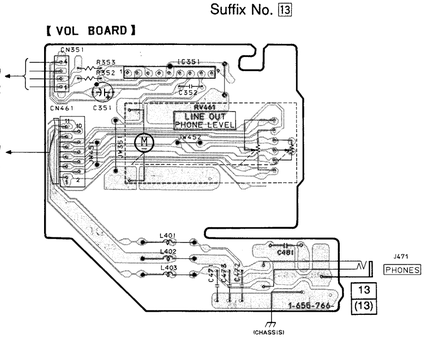
Location : C-15 to C-20



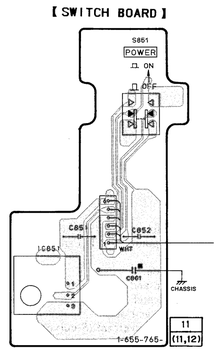


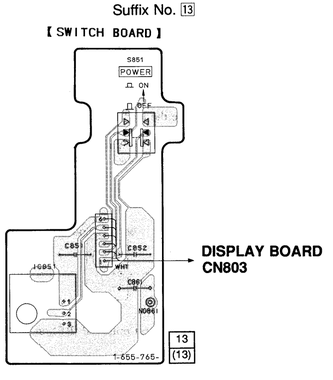
Location : B-21 to B-24





Location : C-11 to C-12



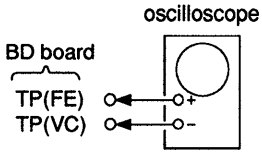


3. ELECTRICAL BLOCK CHECKING (for BU-5BD20)

Note :

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

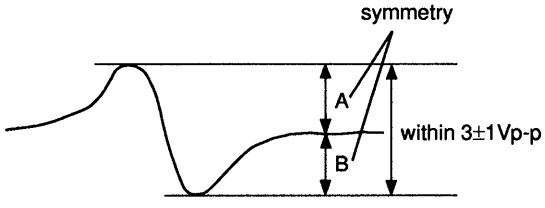
S Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.

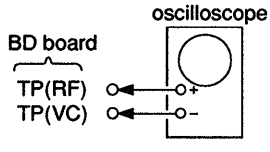
S-curve waveform



6. After check, remove the lead wire connected in step 2.

Note : • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check



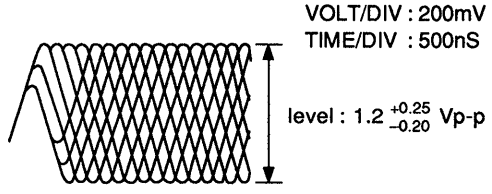
Procedure :

1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

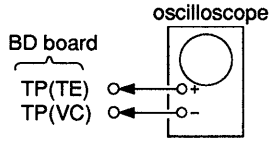
Note :

A clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

RF signal waveform



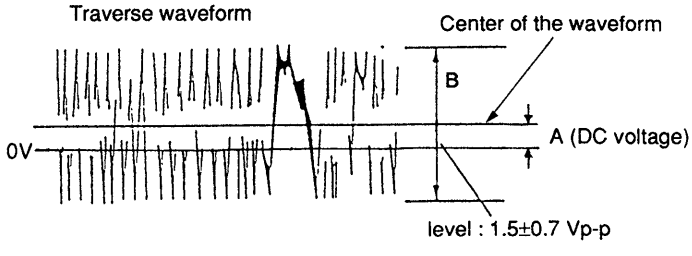
E-F Balance Check



Procedure :

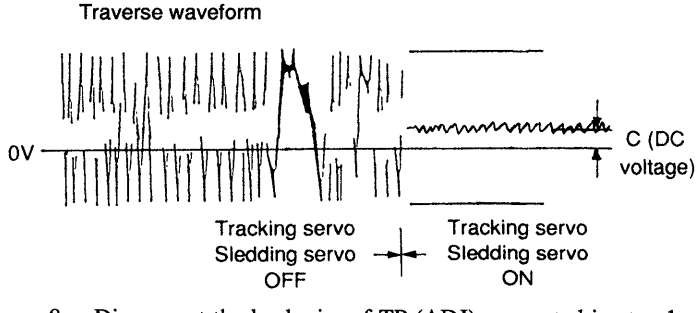
1. Connect test point TP (ADJ) to ground with lead wire.
2. Connect oscilloscpe to test point TP (TE) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in to play the number five track.
5. Press the CHECK button. (The tracking servo and the sledding servo are turned OFF.)
6. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Traverse waveform. Confirm the following :
   A/B x 100 = less than ± 20%.

Traverse waveform



7. Press the CLEAR button. (The tracking servo and sledding servo are turned ON.) Confirm the C (DC voltage) is almost equal to the A (DC voltage) in step 6.

Traverse waveform

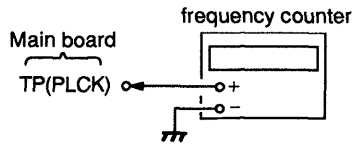


8. Disconnect the laed wire of TP (ADJ) connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

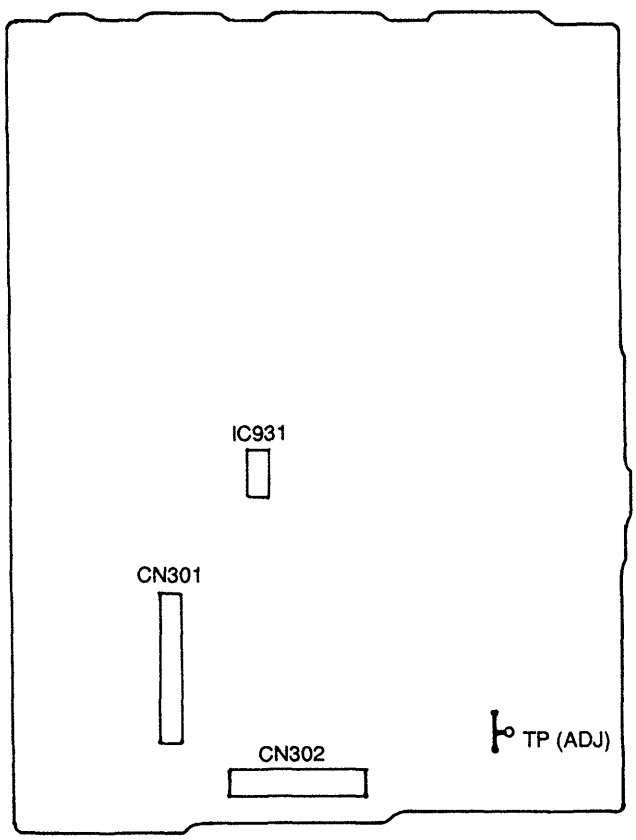
1. Connect frequency counter to test point (PLCK) with lead wire.



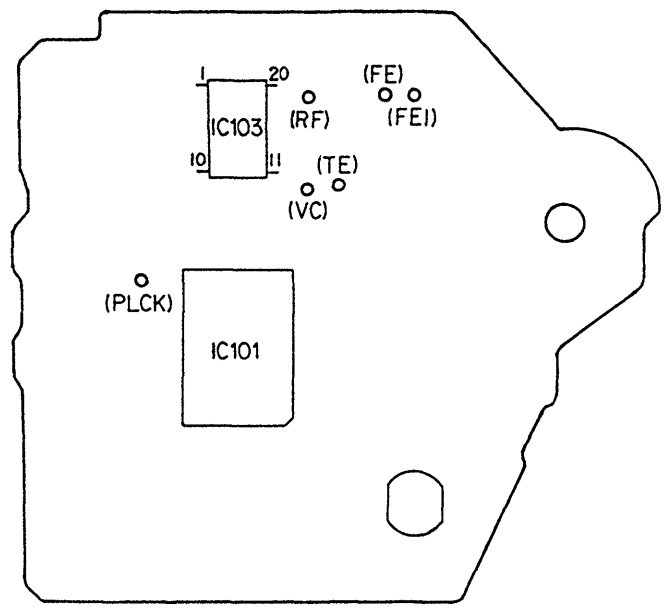
2. Turned Power switch on.
3. Put the disc (YEDS-18) in to play the number five track. Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location :

[MAIN BOARD] — Component Side —



[BD BOARD] — SIDE A —



4. BD BOARD change

BU-5BD20 DIFFERENCE TABLE

Page	BU-5BD10B			BU-5BD20		
	Ref.No	Part No	Description	Ref.No	Part No	Description
25	⚠151	8-848-144-11	OPTICAL PICK-UP KSS-240A	⚠151	8-848-367-11	OPTICAL PICK-UP KSS-213B/K-N
	152	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	152	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)
	* 157	A-4673-432-A	BD BOARD, COMPLETE	* 157	A-4673-509-A	BD BOARD, COMPLETE

- **Base Unit Change**
  As the base unit BU-5BD10 has changed to BU-5BD20, IC801 of the DISPLAY BOARD has changed.
  The interchangeability between IC801 and BD BOARD is as below:

		DISPLAY BOARD IC801	
		FORMER	NEW
		8-752-861-38 CXP82316-052Q	8-752-868-32 CXP82316-059Q
Base Unit Type	BU-5BD10	○	○
	BU-5BD20	×	○

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

IC PIN FUNCTIONS

- **IC101 (CXD2545Q)**

Pin No.	Pin Name	I/O	Function
1	SRON	O	Sled drive output (Not used)
2	SRDR	O	Sled drive output
3	SFON	O	Sled drive output (Not used)
4	TFDR	O	Tracking drive output
5	TRON	O	Tracking drive output (Not used)
6	TRDR	O	Tracking drive output
7	TFON	O	Tracking drive output (Not used)
8	FFDR	O	Focus drive output
9	FRON	O	Focus drive output (Not used)
10	FRDR	O	Focus drive output
11	FFON	O	Focus drive output (Not used)
12	VCOO	O	VCO output for analog EFM PLL (Not used)
13	VCOI	I	VCO output for analog EFM PLL (GND)
14	TEST	I	TEST pin connected normally to GND
15	DVss	–	Digital GND
16	TES2	I	TEST pin connected normally to GND
17	TES3	I	TEST pin connected normally to GND
18	PDO	O	Charge-pump output for analog EFM PLL (Not used)
19	VPCO	O	Charge-pump output for variable pitch PLL (Not used)
20	VCKI	I	Clock input from variable pitch external VCO (GND)
21	AVD2	–	Analog power supply
22	IGEN	I	Power supply pin for operational amplifiers
23	AVS2	–	Analog GND
24	ADIO	I	(Not used)
25	RFC	O	(Not used)
26	RFDC	I	RF signal input
27	TE	I	Tracking error signal input
28	SE	I	Sled error signal input
29	FE	I	Focus error signal input
30	VC	I	Center voltage input pin
31	FILO	O	Filter output for master PLL
32	FILI	I	Filter input for master PLL
33	PCO	O	Charge-pump output for master PLL
34	CLTV	I	Control voltage input for master VCO
35	AVS1	–	Analog GND
36	RFAC	I	EFM signal input
37	BIAS	I	Asymmetry circuit constant current input
38	ASYI	I	Asymmetry comparate voltage input
39	ASYO	O	EFM full swing output
40	AVD1	–	Analog power supply

Pin No.	Pin Name	I/O	Function
41	DVDD	–	Digital power supply
42	ASYE	I	Asymmetry circuit ON/OFF
43	PSSL	I	Audio data output mode selection input
44	WDCK	O	48-bit slot D/A interface. Word clock
45	LRCK	O	48-bit slot D/A interface. LR clock
46	DATA	O	DA 16 output when PSSL=1. 48-bit slot serial data when PSSL=0
47	BCLK	O	DA 15 output when PSSL=1. 48-bit slot data when PSSL=0
48	64DATA	O	DA 14 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
49	64BCLK	O	DA 13 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
50	64LRCK	O	DA 12 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
51	GTOP	O	DA 11 output when PSSL=1. GTOP output when PSSL=0 (Not used)
52	XUGF	O	DA 10 output when PSSL=1. XUGF output when PSSL=0 (Not used)
53	XPLCK	O	DA 09 output when PSSL=1. XPLCK output when PSSL=0
54	GFS	O	DA 08 output when PSSL=1. GFS output when PSSL=0
55	PFCK	O	DA 07 output when PSSL=1. RFCK output when PSSL=0
56	C2PO	O	DA 06 output when PSSL=1. C2PO output when PSSL=0 (Not used)
57	XRAOF	O	DA 05 output when PSSL=1. XRA0F output when PSSL=0
58	MNT3	O	DA 04 output when PSSL=1. MNT3 output when PSSL=0
59	MNT2	O	DA 03 output when PSSL=1. MNT2 output when PSSL=0
60	MNT1	O	DA 02 output when PSSL=1. MNT1 output when PSSL=0
61	MNT0	O	DA 01 output when PSSL=1. MNT0 output when PSSL=0
62	XTAI	I	X'tal oscillator circuit input
63	XTAO	O	X'tal oscillator circuit output (Not used)
64	XTSL	I	X'tal selection input pin (GND)
65	DVss	–	Digital GND
66	FSTI	I	2/3 divider output of pins 62, 63
67	FSTO	O	2/3 divider output of pins 62, 63
68	FSOF	O	(Not used)
69	C16M	O	16.9344 MHz output (Not used)
70	MD2	I	Digital-out ON/OFF control pin (+5V)
71	DOUT	O	Digital-out output pin
72	EMPH	O	Playback disc output in emphasis mode (Not used)
73	WFCK	O	WFCK output
74	SCOR	O	Sub-code sync output
75	SBSO	O	Sub-P through Sub-W serial output (Not used)
76	EXCK	I	Clock input for SBS0 read-out (GND)
77	SUBQ	O	Sub-Q 80-bit output
78	SQCK	I	Clock input for SQS0 read-out
79	MUTE	I	Muting selection pin
80	SENS	O	SENS output
81	XRST	I	System reset
82	DIRC	I	Used in 1-track jump mode (+5V)
83	SCLK	I	SENS serial data read-out clock
84	DFSW	I	DFCT selection pin (GND)
85	ATSK	I	Input pin for anti-shock (GND)

Pin No.	Pin Name	I/O	Function
86	DATA	I	Serial data input, supplied from CPU
87	XLAT	I	Latch input, supplied from CPU
88	CLOK	I	Serial data transfer clock input, supplied from CPU
89	COUT	O	Numbers of track counted signal output (Not used)
90	DV_{DD}	–	Digital power supply
91	MIRR	O	Mirror signal output
92	DFCT	O	Defect signal output
93	FOK	O	Focus OK output
94	FSW	O	Output to select spindle motor output filter (Not used)
95	MON	O	Output to control ON/OFF of spindle motor (Not used)
96	MDP	O	Output to control spindle motor servo
97	MDS	O	Output to control spindle motor servo (Not used)
98	LOCK	O	GFS is sampled by 460 Hz. H when GFS is H (Not used)
99	SSTP	I	Input signal to detect disc inner most track
100	SFDR	O	Sled drive output

SCHEMATIC DIAGRAM

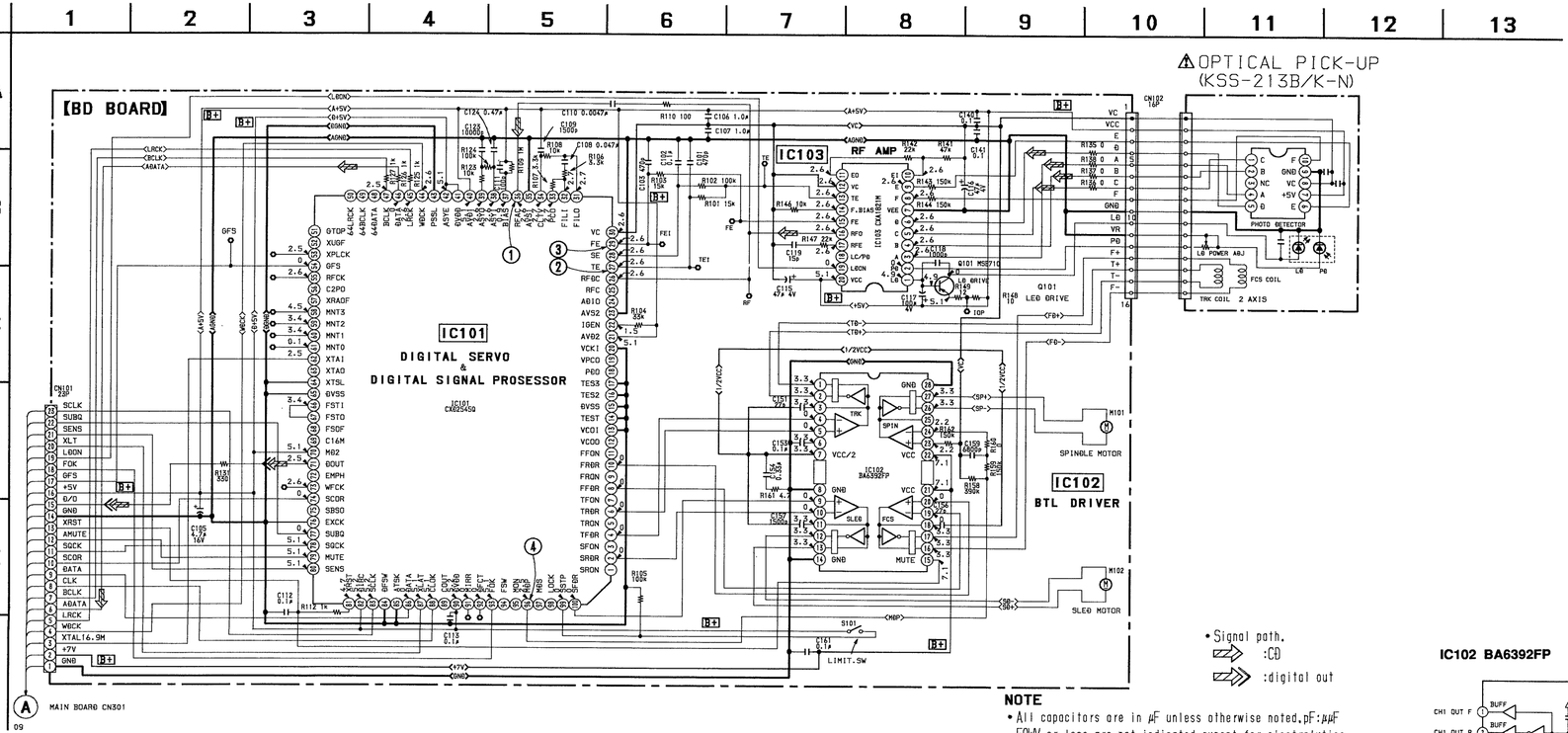
• Waveformes

① IC101 (26) PLAY — 1.2Vp-p

② IC101 (27) PLAY — 2.5V, APPROX 500mVp-p

③ IC101 (28) PLAY — 2.5V, APPROX 200mVp-p

④ IC101 (96) PLAY — 2.6Vp-p, 7.5 μsec



• Signal path.
:CD
:digital out

NOTE

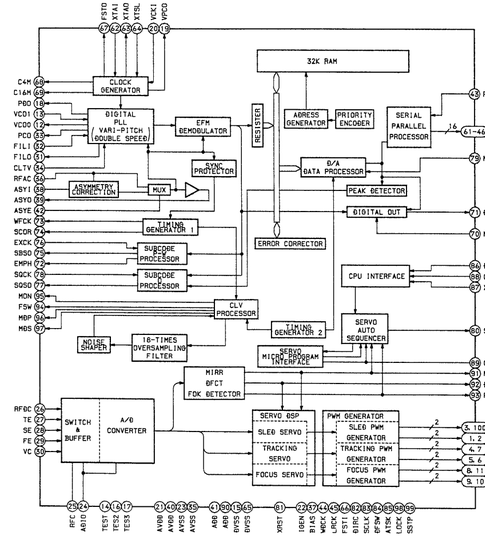
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

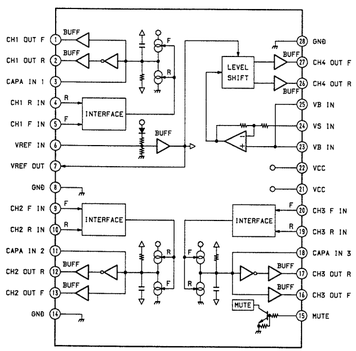
- B+ : B+ Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark: STOP
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

• IC Block Diagrams

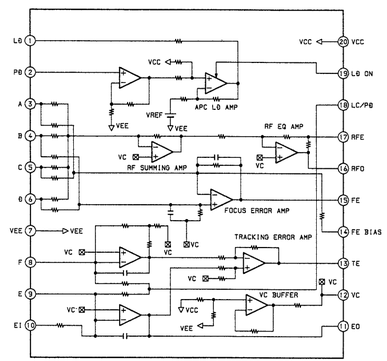
IC101 CXD2545Q



IC102 BA6392FP

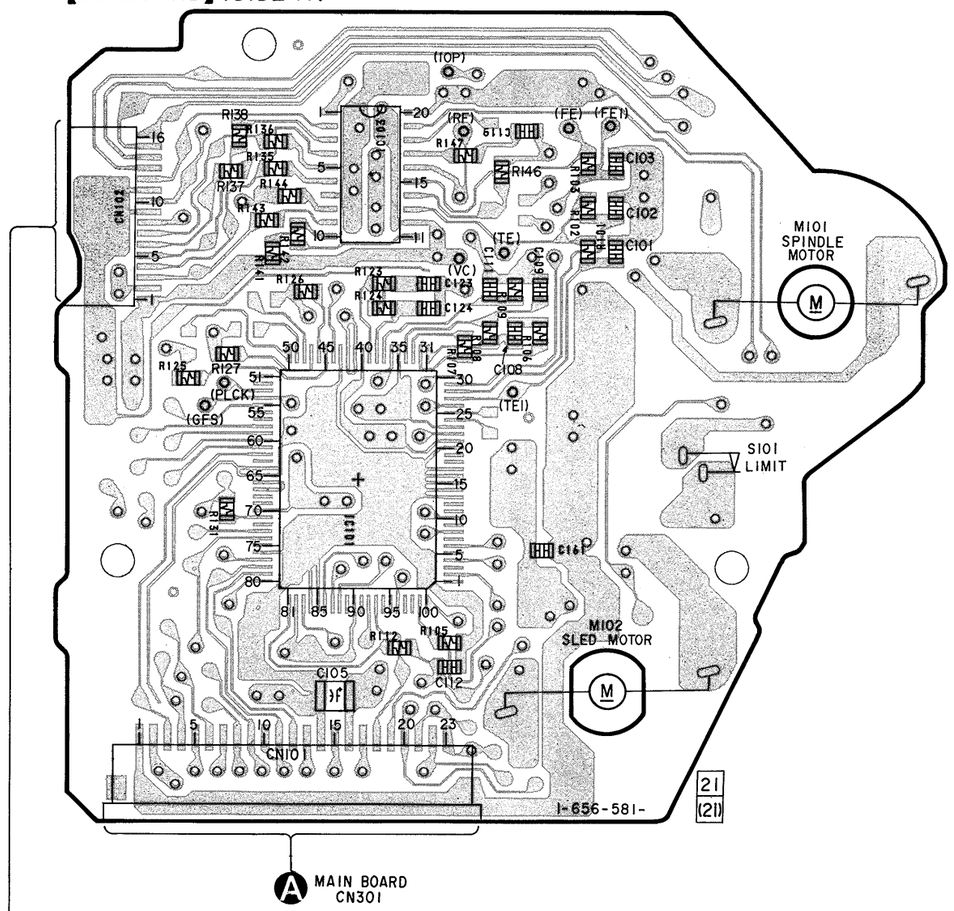


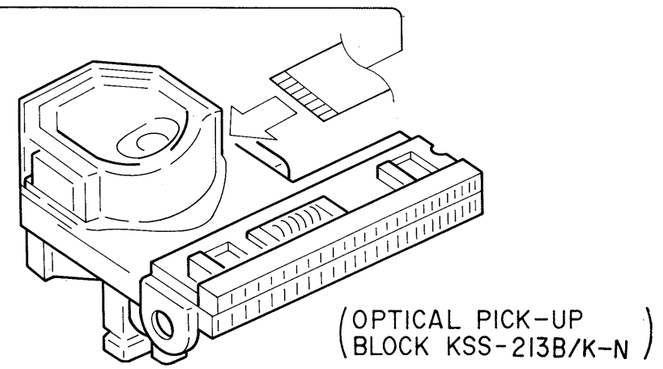
IC103 CXA1821M



PRINTED WIRING BOARD — BD SECTION —

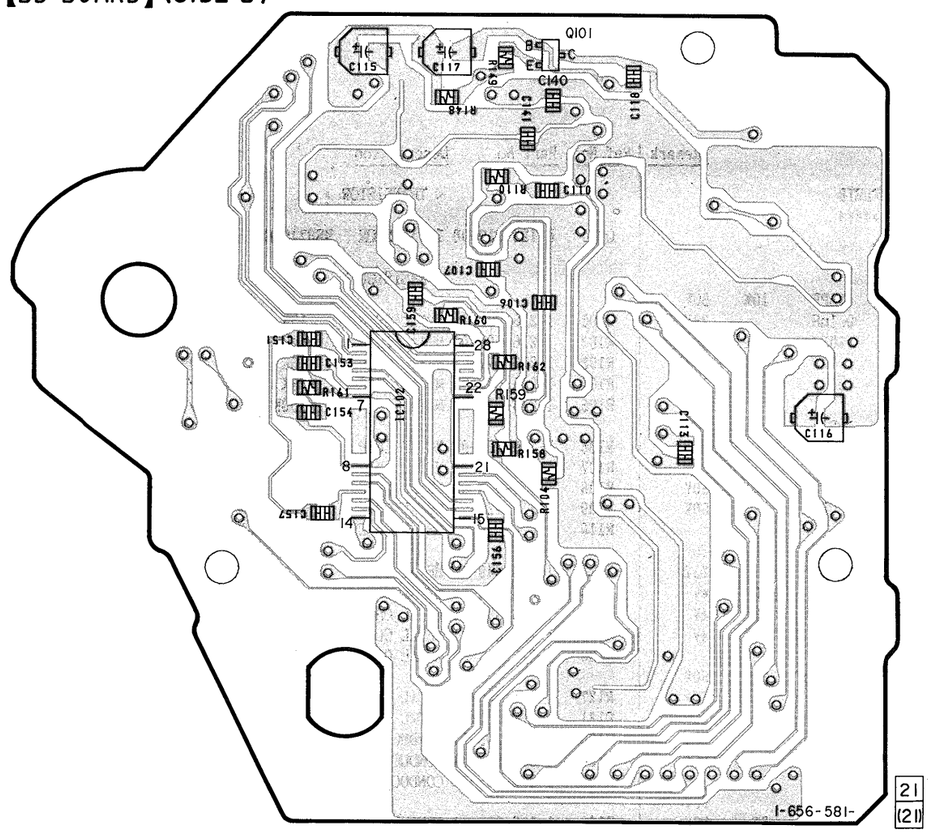
【BD BOARD】(SIDE A)





(OPTICAL PICK-UP
BLOCK KSS-213B/K-N)

【BD BOARD】(SIDE B)



- **Semiconductor Location**

Ref. No.	Location
IC101	C-2
IC102	C-7
IC103	B-2
Q101	A-8

Note:

- ○—— : parts extracted from the components side.
- —— : parts extracted from the conductor side.
- ○ : Through hole.
- ▨ : Pattern from the side which enable seeing. (The other layer's patterns are not indicated.)

ELECTRICAL PARTS LIST

BD

NOTE:

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB..., uPC...: μPC..., uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref.No.	Part No.	Description			Remark
*	A-4673-509-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C102	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C105	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C106	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-346-11	CERAMIC CHIP	1uF		16V
C108	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C109	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C110	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-126-607-11	ELECT CHIP	47uF	20%	4V
C117	1-126-209-11	ELECT	100uF	20%	4V
C118	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C119	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C123	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C124	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C140	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C151	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C153	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C154	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C156	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C157	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C161	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-770-072-11	CONNECTOR (FFC) 23P			
CN102	1-770-014-11	CONNECTOR, FFC/FPC 16P			
		< IC >			
IC101	8-752-369-78	IC CXD2545Q			
IC102	8-759-176-09	IC BA6392FP			
IC103	8-752-072-45	IC CXA1821M-T6			
		< MOTOR >			
M101	X-4917-523-4	BASE (OUTSERT) ASSY (SPINDLE)			
M102	X-4917-504-1	MOTOR ASSY (SLED)			

Ref.No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR MSB710-R			
		< RESISTOR >			
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W
R102	1-216-097-00	METAL CHIP	100K	5%	1/10W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
R105	1-216-097-00	METAL CHIP	100K	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R108	1-216-073-00	METAL CHIP	10K	5%	1/10W
R109	1-216-121-00	METAL CHIP	1M	5%	1/10W
R110	1-216-025-91	METAL GLAZE	100	5%	1/10W
R112	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-097-00	METAL CHIP	100K	5%	1/10W
R125	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R126	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R127	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R131	1-216-037-00	METAL CHIP	330	5%	1/10W
R135	1-216-295-91	CONDUCTOR, CHIP			(2012)
R136	1-216-295-91	CONDUCTOR, CHIP			(2012)
R137	1-216-295-91	CONDUCTOR, CHIP			(2012)
R138	1-216-295-91	CONDUCTOR, CHIP			(2012)
R141	1-216-089-00	METAL CHIP	47K	5%	1/10W
R142	1-216-081-00	METAL CHIP	22K	5%	1/10W
R143	1-216-101-00	METAL CHIP	150K	5%	1/10W
R144	1-216-101-00	METAL CHIP	150K	5%	1/10W
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W
R147	1-216-081-00	METAL CHIP	22K	5%	1/10W
R148	1-216-001-00	METAL CHIP	10	5%	1/10W
R149	1-216-003-11	METAL GLAZE	12	5%	1/10W
R158	1-216-111-00	METAL CHIP	390K	5%	1/10W
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W
R160	1-216-295-91	CONDUCTOR, CHIP			(2012)
R161	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)			

****

9-960-087-81

Sony Corporation
Consumer A&V Products Company
Home A&V Products Div.

English
95G097018-1
Printed in Singapore
© 1995. 7
Published by Home A&V Products Div.
Quality Engineering Dept.